THE BUILDER

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"ARCHITECTURE" and "THE BRITISH ARCHITECT"

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THIS WEEK'S NEWS

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THE organisation adopted by the Kent County Council in relation to the employment of private firms of architects to carry out a proportion of the Council's educational and general building work is given in detail, being based upon information provided by Mr. S. H. Loweth, the County Architect. 206

THE HEALTH CENTRE proposed by the London County Council for one of London's largest housing estates, at Woodberry Down, Stoke Newington, is illustrated and described. The estimated cost is £187,275, and it will be the first building of its kind in London and the first in the whole country to be approved by the Minister of Health. 211

IN the course of Parliamentary discussion on the Festival of Britain, 1951, Mr. Barnes, Minister of Transport, said that sympathetic consideration would be given to the building of piers to encourage river traffic. 221

MODERN design in relation to heating appliances was described by Mr. J. Nelson Meredith, F.R.I.B.A., City Architect of Bristol, at a Conference in that city. He made practical suggestions for achieving the principal objectives in domestic fuel economy. 222

AMERICAN architects, manufacturers and the Government of the U.S.A. are co-operating in a scheme of "modular co-ordination" by which four inches is introduced as the basic dimension for a full range of manufactured building materials. 222

PRESENT-DAY tendencies in the design and construction of concrete roads have been described by Mr. W. P. Andrews, A.M.I.C.E., who says that we may not be able to emulate the scale of work being done abroad, but in quality of construction we should be second to none if we apply the results of experience and research. 224

ACCORDING to Mr. Norman Longley, President of the National Federation of Building Trades Employers, the two chief directions in which builders must be active are efficiency in business methods and maximum man-hour production. 228

A REMINDER that personal contact between building operatives and building employers is an essential in providing the answers to building problems has been given by Mr. Nigel Hannen, President of the L.M.B.A. 228

THE ARCHITECT AND THE BUILDER

A GREAT deal of public speaking, while entertaining the immediate audience, leaves little permanent impression behind it, and no more than a spate of words goes into the limbo of record. Now and then there is recorded a speech or an address which leaves behind it a train of thought which can react definitely upon practice. The speaker who is able to achieve this end is the one who can compress into considered words a wealth of the philosophy which can rule the actions of man. Not only must the words be well chosen but the occasion also, and none has a better opportunity than the leader of a great profession.

The President of the R.I.B.A. seized such an opportunity at the review of students' drawings on February 8, in his brief introductory address, and so stimulating were the points he made that some special comment is called for. Never was there a time when a call for the architect to be true to architecture has been more appropriate, for the spirit of the times has drifted far from the studentship of former days when there were giants in the land. Those men were not only artists but practical exponents of the art of building, with a knowledge of contemporary construction which has never been surpassed. They took these practical processes as axiomatic, and with them the less spectacular services demanded, as a proper price for the privilege of exercising their art as architects. They were under no delusion that the architect could float in a spiritual plane above the needs of secure and weather-tight building, or the convenient arrangement of such accommodation as his clients demanded. These were the conditions of successful practice which had to be fulfilled, but they in no way exonerated the artist from his prime purpose of ordering these hard facts into the form and enclosure of beauty.

For long enough we have been too much subject to the easy cliché. "Functionalism" had its day until the word turned sour on the tongue, for it posed as the invention of things which architects of all great ages have taken for granted as the practical purpose of their appointment; "the scientific approach to planning" threatens to take its place, and with no more solid purpose behind it. Neither has the magic touch to inspire artists to great things; rather do they persuade the student that his stairway to the stars is paved with decibels, daylight factors, heat losses and factors of safety, and that these highly important pieces of science are more than merely some of the tools with which to make the packing-case in which his precious jewel of architecture must be delivered. The things which can make a building function as a successful machine can be bought with money. The artistry which can give charm, or even majesty, to our surroundings cannot be bought. It can only grow in the soul and bear its fruit by the grace of heaven. "Let the architect not cumber himself with too much of the intricacies of the various knowledges of differing types of engineers or surveyors, or other professions. Let him be true to architecture." In such words we believe the President intended to convey such thoughts as these.

Another stimulating sentence in his address gave as one of the architect's chief assets "the power to absorb quickly, the more quickly the better, the thoughts of others." This, too, drives right into the heart of the problem of the architect and his job. It is a much broader matter than may at first appear, for in all architectural education there has always been a proper emphasis on the necessity of grasping quickly and fully the needs of the client. The ordinary design programme, whether in school or examination, is to test this ability, with the master and the examiner sitting in the client's

chair, and the student at the architect's desk. But he must keep his mind open to other considerations than this, and in particular must he realise that a building grows under his direction only by the skilful service of the builder, and that it is as important for him to enter into the mind of the builder, and to appreciate the conditions under which he is bound, as for the builder to enter into the mind of the architect.

Successful architecture is a record of sympathetic partnership between architect and builder, in which both contribute much more than can be laid down specifically in any legal document. This fact too often is neglected, especially among the younger architects, though not by any means exclusively among them. The President rightly suggested that this side of practice should take a more important place in "the architect's professional catechism." The very wide powers of the architect, circumscribed as they may be in a proper contract document, but in fact becoming almost arbitrary in all but major issues, make it all the more necessary that he should hold the scales of justice impartially in all matters within his discretion. It is not a case of taking sides against his paymaster, for none stands to gain more from a builder's confidence in the architect than does the client, and that confidence is built up not merely upon the evidence of one job but upon reputations acquired only after years of practice.

We would extend the President's line of thought even further, and mention the public taste as a factor to which too little regard has been paid. By this we do not mean playing down to the gallery, but a recognition that the public has an intelligence, and that there are things which can be unintelligible to it if they are ignored. There are many mean commonplaces which the public can and does understand and, unless the artist can produce finer things within its comprehension, the meaner things will, as they often have, become the signs of a low common taste in art. Artists must speak a language, and, in all the best periods of architecture, that language has become a vernacular, but one which admits all the finer and grander qualities of art. It is so easy to be superior if one speaks in an unknown tongue.

PRIVATE ARCHITECTS AND OFFICIAL WORK

CURRENT social and economic developments have profoundly affected the position of the architect and the character of his work. Long before the war there was a markedly increasing tendency to make use of his services in an official rather than a private capacity, due to the growth of large business and industrial corporations and to an expansion of the building activities of public and semi-official authorities. To-day, as a result of greatly increased State control over the life and affairs of the nation—the nationalisation of transport, fuel and power, new Town and Country Planning legislation, the taking over and development of health services, and the concentration in the hands of County and Municipal Authorities of vast programmes of building work—the architect finds the opportunities to exercise his art more and more in the public service. In point of fact, these developments, together with the control of private building work by licence, have thrown the profession completely out of its former balance. A special committee of the R.I.B.A. is now considering the temporary and long-term problems which have thus been created for the profession as a whole. We do not propose to attempt to anticipate its findings, but on one aspect of the matter it is possible to throw some light and perhaps to offer some useful suggestions which have added force in view of the Minister of Education's recent advice (*The Builder*, February 11 last), that local education authorities should look at the long-term establishment and *organisation* of their architects' departments. "I stress the word *organisation*," said Mr. Tomlinson, "because I am not altogether convinced that the present shortage of architects is an absolute shortage rather than a relative shortage." This Ministerial view is worthy of close examination.

The great increase in the volume of official work to be undertaken has presented many County and Municipal Authorities with the choice of expanding their own technical staffs or of distributing the extra work among architects, engineers and quantity surveyors in private practice. Many authorities have adopted the first course; a comparative few the second; while some others have compromised and combined the two in varying proportions. The right decision—for human as well as practical reasons—is obviously a difficult one to make. There is clearly a temptation for the head of an official department to expand it into a large omnicompetent organisation. Centralisation and efficiency may be claimed as the advantages of so doing. Expansion, however, is by no means an inevitably successful course to follow. In turn it creates its own problems. For example, finding the necessary accommodation for extra staff may mean the requisitioning of property or even the erection of new buildings, with all the expense, inconvenience and delay entailed, together with some loss of the advantages of centralisation. Moreover, a suddenly expanded staff cannot be expected to function at once like a piece of well-oiled machinery. No matter how competent its new members, they need to be trained in some measure if they are to fit in efficiently with the existing organisation. Problems of administration, too, at once become more complex, and principals who should be doing creative work may find themselves completely occupied in what may be uncongenial tasks.

The obvious alternative is to distribute the extra work, or a reasonable proportion of it, among private architects, who work closely in co-operation with the departmental chief. This policy has been followed with notable success by several of our County and Municipal Authorities. It has many advantages, the most important of which is that the creation of an unwieldy temporary staff, with all its problems of accommodation and administration, is avoided. Private architects are engaged on a fee basis for a specified work and can be re-engaged for further work as required. They work in their own offices and employ their own staffs. They bring to their task enthusiasm and a freshness of outlook that should be all to the benefit of public architecture. As time goes on and as official work falls off the private architect may look forward to the freer issue of licences for private building to "take up the slack." In the meantime, official work will have enabled him to keep his practice in being, to the great advantage of the community—the public and the private client alike.

Elsewhere in this issue some account is given of the organisation embracing the services of private architects, engineers and quantity surveyors which has been built up by Mr. S. H. Loweth, F.S.A., F.R.I.B.A., Kent County Architect, to cope with a greatly enlarged programme of official work. It is interesting to note that a total of 226 works is at present being carried out at a cost of £4,213,885, and of the 57 projects for which working drawings are being prepared, 27 (estimated to cost £1,119,220) are in the hands of private architects (more than a quarter of the total value); while of a further 144 projects at the "preliminary plan stage" 37 are the work of private architects. This is a remarkable tribute to the value of the private practitioner, and Mr. Loweth deserves the best thanks of the profession for putting this co-operative policy into practice and showing that when properly organised and operated it can be a complete success.

The cost of running an organisation of this kind appears to be little, if any, greater than that of an entirely official one; indeed, it is thought that it may prove to be more economical by reason of the fact that under it work can be started more quickly than may otherwise be possible.

Our article which begins on page 206 describes this Kent organisation in some detail, in view of the great interest which it has aroused among public authorities and private architects. We are convinced that the policy of the Kent County Council, and other enlightened authorities, of engaging private architects in preference to swelling their official staffs to unreasonable proportions to meet what, after all, is only a temporary pressure, is the right one from every point of view, and we suggest that it might be adopted with advantage by many other County and Municipal Authorities.

NOTES AND NEWS

British Sporting Pictures.

HUTCHINSON HOUSE (late Derby House) in Stratford-place, W., was recently opened to the public as the National Gallery of British Sports and Pastimes. Through the generosity of Mr. Walter Hutchinson, the gallery contains more than 3,000 pictures and coloured prints dealing with all forms of British sport, depicted by the best-known artists of the period from the earliest known to the reigning President of the Royal Academy, Sir Alfred Munnings.

Mr. Hutchinson has done a great public benefaction; not only has he provided the funds for this magnificent collection, which includes the famous Stratford Mill on the River Stour, by John Constable, R.A.—pictures which will give pleasure to sportsmen and painters alike—but in addition he has given and so preserved for posterity this fine Adam house, which is a worthy setting for the pictures, and will, of itself, give pleasure and satisfaction to architects and students. Stratford-place dates from 1775, and the mansion facing Oxford-street was for many years the residence of Edward Stratford, second Earl of Aldborough. Previously on the site, until 1737, was the banqueting house of the Lord Mayor of London.

Planning New Nursery Schools.

As part of their silver jubilee celebration, the Nursery School Association of Great Britain and Northern Ireland are holding an exhibition at 1, Park-crescent, London, W.1, from February 21 to March 12. Its purpose is to show by means of photographs and architectural plans the progress of the nursery school movement during the past 50 years. Included in the exhibition is a graph showing nursery school and nursery class provision in relation to population figures, and an interesting feature is a plan and model of a new "shelter" type of building, which the Association is advocating as an economical and effective way of building nursery schools at the present time.

H.M. QUEEN MARY, seen leaving the Building Centre after a visit on February 7. Mr. F. R. Yerbury is in attendance. The Building Centre was also honoured on the following day by a visit from H.R.H. the Princess Royal.

With the exception of Monday, February 21, when the opening ceremony will be performed by Mrs. C. R. Attlee, the exhibition will be open to the public from 10 a.m. to 5 p.m. (Mondays to Fridays) and from 10 a.m. to 12 noon on Saturdays. Admission is free.

Clichés of Architecture.

AT the recent R.I.B.A. meeting, when students' work was reviewed, Mr. Furneaux Jordan pointed out that to apply the term cliché to many of the features of modern architecture has, in itself, become a cliché. Architecture has always tended to become cliché-ridden, but the purity of its past achievements has not been equalled in recent development. Most modern designers find it impossible not to duplicate the work of their contemporaries to some extent. Therefore all architecture which is not original is labelled as a cliché. Modern architecture, with its set structural form, is basically more limited in its construction than that of other periods. This possibly explains the prevalence of clichés. The designer can find no structural plasticity to vary his expression, and in despair, resorts to formulistic *motifs*, all very controlled and in the best possible modern taste.

Royal Academy Exhibition, 1949.

THE receiving days for works submitted for the Royal Academy Exhibition, 1949, which opens on April 30 and closes on August 7, are earlier than usual this year. The days will be:

Water colours, pastels, miniatures, paintings in tempera, black and white drawings, colour prints, engravings, and architectural drawings, Friday, March 18; oil paintings, Saturday, March 19, and Monday, March 21; sculpture, Tuesday, March 22. The hours for the reception of works are 8 a.m. to 7 p.m. except on Saturday, March 19, when the hours will be 8 a.m. to 3 p.m. All works must be delivered at the Burlington-gardens entrance.

The Royal Academy authorities state that the frames of architectural drawings must not exceed 2 in. in breadth. Preference will be given to geometrical drawings not exceeding ½-in. scale. Small photographs of architecture and architectural sculpture not exceeding "half-plate" size will be admitted, but only in connection with working drawings and included in the same frame. Architectural drawings which are the work of an artist other than the designer must have the names clearly inscribed on the mount, as follows: "Designed by . . . Architect; drawn by . . ." A piece of decorative or monumental sculpture may be accompanied by an explanatory drawing of not more than 10 in. by 6 in., which must be framed and glazed.

Council of Industrial Design.

MR. HOWARD V. LOBB, F.R.I.B.A., has been appointed by the President of the Board of Trade to the Council of Industrial Design. The appointment is for a period of three years.

Professional Announcements.

MR. J. VINCENT ELWORTHY, quantity surveyor, has moved to 34, St. John's-hill, Clapham Junction, S.W.11, and would be pleased to receive trade literature.

MESSRS. SCHERRER AND HICKS, M.A., FF.R.I.B.A., A.A.Dipl., chartered architects, 310, Upper Regent-street, W.1, announce that, as from February 14, they have opened an additional office at 50, George-street, Croydon (tel.: Croydon 4156-7-8), and would be glad to receive trade catalogues and price lists by post.

COMING EVENTS

Monday, February 21.

ROYAL SOCIETY OF ARTS.—"The Corrosion of Metals" (Lecture I—General Principles), by Mr. W. H. J. Vernon, O.B.E., D.Sc. John Adam-street, W.C.2. 8 p.m.

THE INSTITUTION OF ELECTRICAL ENGINEERS.—"Industrial Design in Engineering." Discussion opened by Mr. N. E. Kearley, Savoy-place, W.C.2. 5.30 p.m.

Tuesday, February 22.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—"Mannerism in Architecture," by Prof. Anthony Blunt, C.V.O., 66, Portland-place, W.1. 6 p.m.

THE HOUSING CENTRE.—"Children's Playgrounds," by Mr. G. K. MacLean. 13, Suffolk-street, S.W.1. 1.15 p.m.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.—82nd A.G.M. of donors and subscribers. 47, Bedford-square, W.C.1. 5.30 p.m.

Wednesday, February 23.

TOWN AND COUNTRY PLANNING ASSOCIATION.—"Groundnuts," by Mr. J. M. McClean. 28, King-street, W.C.2. 6.15 p.m.

BRITISH STANDARDS INSTITUTION.—General Council dinner. Speakers, the Rt. Hon. J. H. Wilson, O.B.E., M.P., and the Rt. Hon. G. R. Strauss, M.P. Dorchester Hotel, Park-lane, W.1. 7.30 p.m.

THE INSTITUTE OF WELDING.—Luncheon. Café Royal, Regent-street, W.1. 12.30 p.m.

THE REINFORCED CONCRETE ASSOCIATION.—"The Control of Variations in the Quality of Concrete," by Mr. F. N. Sparkes, M.Sc., M.I.C.E. The Institution of Structural Engineers, 11, Upper Belgrave-street, S.W.1. 6 p.m.

THE WALLBOARDS MERCHANTS' ASSOCIATION OF THE UNITED KINGDOM.—Annual dinner. Grosvenor House, Park-lane, W.1. 7.30 p.m.

Thursday, February 24.

ROYAL INSTITUTION OF GREAT BRITAIN.—"Royal Building Works Under the Stuarts (1) The Office of Works in the 17th Century," by Mr. John Summerson, F.S.A., A.R.I.B.A. 21, Albemarle-street, W.1. 5.15 p.m.

UNIVERSITY COLLEGE, LONDON.—"The Georgian House," by Mr. S. Hyde, F.R.I.B.A. Anatomy Theatre, Gower-street, W.C.1. 1.15 p.m.

Friday, February 25.

INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS.—Annual dinner and dance. Piccadilly Hotel, W.1. 7 p.m.

FROM "THE BUILDER" OF 1849

Saturday, February 17, 1849.

See what the committee for restoring the Lewes Free Grammar School have the impertinence to make public. We were about to say the *courage* to make public, but it needs no courage. Architects have lost all proper spirit and self-esteem. The advertisement is directed—"To the Architects and Builders of Sussex," and stands thus,—"The architects and builders of Sussex are invited to furnish plans and estimates for rebuilding the Lewes Free Grammar School at an expense not to exceed 2,000*l*., to be prepared according to instructions from a sub-committee already organised for that purpose, which instructions may be had on application at the office of Messrs. 'Gull and Co.,' to whom such plans and estimates are requested to be delivered on or before the 27th of February next. The architect or builder whose plan and estimate shall be finally adopted will be entitled to a *remuneration not exceeding ten pounds ten shillings*, at the discretion of the committee."

A remuneration! Mark that, ye rising Wykehams and little Wrens. . . . . (*From a leader*).

*** The leader drew attention to the somewhat doubtful circumstances surrounding the competition for Birmingham Workhouse, and with reference to this and to the competition at Lewes, commented: It marks the status the profession enjoys: it shows the contempt in which architects are held.

COMPETITION NEWS

Proposed Fleet Air Arm Memorial

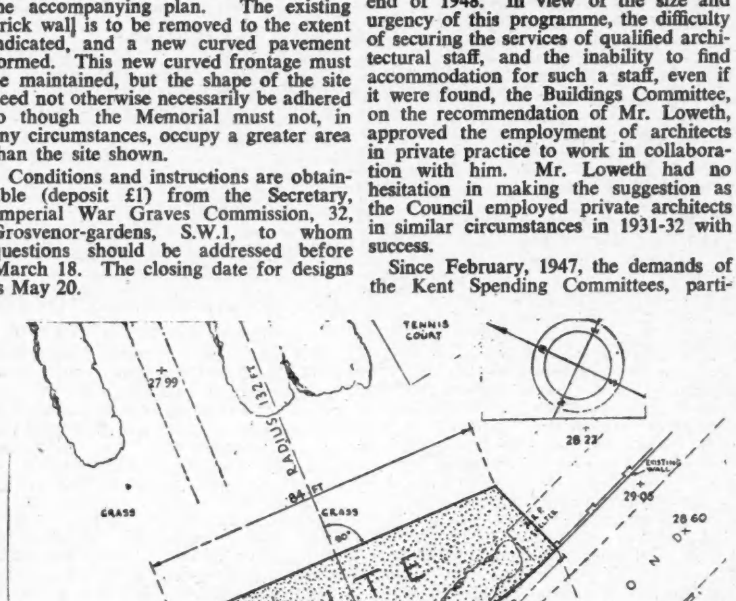
THE Imperial War Graves Commission invites architects who are ex-serving full-time members of H.M. Forces to submit designs in competition for a Memorial which they propose to erect on a site on Marine-parade-west, Lee-on-Solent, to commemorate the names of officers and men of the Fleet Air Arm of the Royal Navy who fell in the 1939-45 War who have no known graves. The Commission has appointed Mr. Edward Maufe, R.A., as assessor.

Premiums of £100, £60 and £30 are offered.

The cost of the Memorial, including foundations, sculpture and the provision of names, successful competitor's fees and contingencies, is not to exceed £6,000. The character of the design, and the materials to be used, are left to the discretion of the competitor, but it is emphasised that the Memorial must be worthy of its inspiring purpose, and that the materials used shall not involve upkeep expenses. The arrangement and method of recording the 1,500 names is left to competitors but (a) if the names are recorded by raised lettering of bronze panels, then approximately 140 sq. ft. are required; (b) if the names are recorded by lettering incised in stone, then approximately 250 sq. ft. are required.

The site for the Memorial is shown on the accompanying plan. The existing brick wall is to be removed to the extent indicated, and a new curved pavement formed. This new curved frontage must be maintained, but the shape of the site need not otherwise necessarily be adhered to though the Memorial must not, in any circumstances, occupy a greater area than the site shown.

Conditions and instructions are obtainable (deposit £1) from the Secretary, Imperial War Graves Commission, 32, Grosvenor-gardens, S.W.1, to whom questions should be addressed before March 18. The closing date for designs is May 20.



COMPETITION FOR FLEET AIR ARM MEMORIAL, LEE-ON-SOLENT. The site plan. (See above.)

Private Architects and Official Work

KENT COUNTY COUNCIL'S ORGANISATION

EXPAND the department or distribute the work? That is the question which many county and other authorities have to answer as a result of the concentration in their hands of great programmes of building work—housing, schools, hospitals, etc.—which they are not normally equipped to handle. Many have followed the first course; comparatively few the second. In some cases departments have been built up to an unwieldy size, and this at a time when large numbers of private architects are almost idle as a result of the suspension of private building. From the moment that the consequences of Government building policy became apparent *The Builder* has consistently urged the desirability of distributing a reasonable proportion of this official work among private architects in preference to the inflation of official staffs. A few enlightened county and other authorities have done admirable pioneer work in following out this policy, notable among them being the Kent County Council, whose Buildings Department is directed by Mr. S. H. Loweth, F.S.A., F.R.I.B.A., Kent County Architect. Policy was decided in February, 1947, when the County Education Officer received from the Ministry of Education a list of 34 projects to be completed, if possible, by the end of 1948. In view of the size and urgency of this programme, the difficulty of securing the services of qualified architectural staff, and the inability to find accommodation for such a staff, even if it were found, the Buildings Committee, on the recommendation of Mr. Loweth, approved the employment of architects in private practice to work in collaboration with him. Mr. Loweth had no hesitation in making the suggestion as the Council employed private architects in similar circumstances in 1931-32 with success.

Since February, 1947, the demands of the Kent Spending Committees, particularly the Education Committee, have been such that it has been necessary to employ no fewer than 35 firms of private architects. This policy has the general approval of the Council, primarily because it ensures that the work is carried out with promptitude. It is possible, however, that doing the work now instead of postponing it until trained staff become available and effective, may result in ultimate economy. The Council were also influenced by the consideration that if curtailment of the building programme should suddenly become necessary at any time the services of private architects could be terminated more conveniently than those of "permanent" staff.

In view of the success with which the Kent organisation is being run and of the wide interest which it has aroused, the following outline of its constitution and activities, based on information kindly provided by Mr. Loweth, should be useful at the present time, when many authorities and private architects are seeking a solution of their mutual problems.

Organisation.

The organisation of the Buildings Department is clearly shown on the "family tree" reproduced on p. 208. As will be seen, it includes 35 firms of private architects, four firms of private consulting engineers, and 17 firms of private quantity surveyors. The private architects work in collaboration with the Deputy and senior staff architects, who correlate their activities; the consulting engineers, who are employed in connection with heating and mechanical and electrical engineering services (the Engineering Section of the Department being insufficient to cope with the whole of this work), collaborate with the principal staff engineer; while the quantity surveyors take out and prepare bills of quantities, prepare a specification and check the priced bill of the lowest tenderer, make valuations for interim payments to the contractor and measure and make up accounts of variations of the contract, and work in collaboration with the senior staff architects (the Department has no Quantity Surveying Section). Private architects are allowed in certain cases to suggest their own quantity surveyors, as this may help them with their preliminary estimates.

There is a Sites Section which deals with the selection of sites, prepares site plans and technical reports in connection with their acquisition, and in some cases prepares surveys and levels in connection with the building proposals. The same Section deals with the submission of plans for approval under the Town and Country Planning Act and any further consents which may be required.

There is, in fact, a complete organisation to deal expeditiously with all "outside helpers," and any mistakes which may be made with any one firm are speedily corrected with all the rest.

Private architects are employed for hospitals as well as schools, in addition to to which there is a variety of work of less importance to be done, such as canteens and remodellings and surveys of existing buildings. By employing private architects (in association with its own surveying and architectural staff) the Department was able to prepare within

a comparatively short time a complete record—plans, sites and technical reports—of every school in the county (nearly 900 in all), a work for which it was commended by the Ministry of Education. If the work had had to be done entirely by the Department's own depleted staff it would have taken much longer.

Private Architect's Duties.

The following comparison shows in summarised form the work the private architect has to undertake *vis-à-vis* the R.I.B.A. scale.

Work as required by Clause 2 (a) of the R.I.B.A. scale.	*Work as required by the Kent County Council.*
1. Taking the client's instructions.	No.
2. Preparing sketch design.	Prepared either by the private architect or the Buildings Department.
3. Making approximate estimate of cost by cubic measurement, or otherwise.	
4. Preparing drawings and specifications for the purpose of obtaining tenders.	(*a*) Preparing working drawings. (*b*) The specification for the building works will be prepared by the quantity surveyor, but to enable him to do so, the private architect is required to furnish him with brief notes regarding the construction of the building and the materials to be used, together with schedules of doors, windows and general finishings. (*c*) Preparing the technical portion of specifications in connection with prime cost items and provisional sums.
5. Advising on tenders and preparation of contract.	No.
6. Selecting and instructing consultants (if any).	No.
7. Furnishing to the contractor two copies of the contract drawings and specification, and such further details as are necessary for the proper carrying out of the works.	Yes, but it should be noted that the specification does not form part of the contract.
8. General supervision.	Yes.
9. Issuing certificates for payments.	No. Certificates are issued by the County Architect on the recommendation of the quantity surveyor.
10. Passing and certifying accounts.	No. The variation account is prepared by the quantity surveyor and it is certified by the County Architect.

Fees.

The fees paid to private architects for new works are 5½ per cent. if they prepare the complete scheme, and 4½ per cent. if the preliminary plans and estimate of cost are prepared by the official staff and the private architect develops the working drawings. For works of alterations and additions, not exceeding twice the foregoing percentages are paid.

Guidance of Private Architects.

Very full notes for the guidance of private architects have been prepared and are given in full in the Appendix. They cover the following subjects: The programme; agreement to be entered into with the Council; co-ordinating officers; administration:—consulting engineers, quantity surveyors, clerks of works; tarpaving works; estimate of cost; quotations from specialist sub-contractors; specifications (building work); bills of quantities; building contract; interim certificates; variations of the building contract; technical details: documents, drawings, construction and planning, both for schools and other County buildings.

Variation Orders: Particular importance is attached to these, and to make sure that all concerned receive a copy the orders are printed in booklet form (six sheets) for contractor, quantity surveyor and consulting engineer, private architect, head of technical section, office file copy, and accounts section. The private architect prepares only draft variation orders and submits them to the County Architect for approval. When issued they are signed by the County Architect or his deputy—nobody else. The office copy shows the financial control. Only variation orders on these forms are acknowledged and paid for, and they must appear in the final account in numerical order. Complete control is thus obtained over every job: Private architects do not attend committee meetings, only the County Architect, his Deputy, or his senior assistants, who are answerable for the scheme. When a new job is started the variation orders of an earlier and similar work are looked up and benefit taken of the corrections made. This variation order system works very well.

Every possible assistance is given to the private architect. Information Circulars are issued giving particulars of Government Departmental memoranda on materials for various purposes, substitutes, and lists of recommended proprietary materials of various kinds, together with names and addresses of manufacturers. Useful notes are added on authorisations for steel and timber, and on a great variety of points relating to construction, finishings, equipment, etc.

The Estimating Section keeps an up-to-date map of brickfields and their stocks. Sample brick walls have been erected at Maidstone for the benefit of the private architects, who may not be familiar with local varieties and sources of supply. A small Section is responsible for keeping a record of new materials, specimens of which are on view in a "sample room."

At January 20, 1949, no fewer than 226 major projects were in hand for the Kent County Council at a total cost of £4,213,885, and of the 57 projects for which working drawings are being prepared, 27 estimated to cost £1,119,220 were in the hands of private architects. Mr. Loweth writes: "The employment of firms of private architects, quantity surveyors and consulting engineers to augment my own staff has certainly enabled me to carry out a large programme much more quickly than would have otherwise been the case, and this policy will be pursued to meet any future increase in the building programme, as the arrangements have worked smoothly and satisfactorily."

APPENDIX

[NOTES FOR THE GUIDANCE OF PRIVATE ARCHITECTS

VERY full notes for the guidance of private architects have been prepared by the County Architect, and are reproduced here in full:—

Circulars are issued to private architects from time to time, giving them additional technical information which may be of assistance in the preparation of their schemes.

1. The Programme.

(a) The building programme is divided into two main groups, namely schools and county buildings.

(b) The schools programme has been sub-divided into the following groups:—

(i) Projects exceeding £5,000.

(ii) Minor projects and schemes not exceeding £5,000.

(iii) School Meals Service.

2. Agreement to be entered into with the Council.

(a) If the private architect has not previously entered into a contract of service with the County Council, an Agreement will be sent to him by the County Solicitor for execution. (b) As the agreement is in general terms, a letter of appointment will be sent to the private architect in respect of each job for which his services are required, after the County Architect has first ascertained that the private architect is in a position to undertake the work.

3. Co-ordinating Officers.

Members of the County Architect's Senior Staff are appointed Co-ordinating Officers under the following heads:—(1) *Architectural*: (a) Schools, (b) County Buildings; (2) *Sites;* (3) *Administrative.*

Administrative.

4. Consulting Engineers.

(a) The County Council have entered into contracts with consulting engineers in connection with heating, ventilating, domestic, mechanical and electrical engineering works.

(b) A copy of the letter of appointment which the County Architeet sends to the consulting engineer (for each job for which he is employed) will be sent to the private architect so that he knows who the consulting engineer is and what he has been instructed to do.

(c) Under the terms of his contract with the Council, the consulting engineer is responsible for the design, supervision and proper execution of the engineering works for which he is employed. The private architect will be required to supply to the consulting engineer such drawings and information as he may require to enable him to advise the Council in relation to the engineering works. There must, therefore, be proper collaboration between the private architect and the consulting engineer on technical matters affecting the work for which they are each responsible.

(d) There should be an inter-change between the County Architect and the private architect of copies of any communications which they respectively send to the consulting engineer.

5. Quantity Surveyors.

(a) The County Council have a panel of firms of quantity surveyors with whom contracts have been entered into on special terms.

(b) A copy of the letter of instruction which the County Architect sends to a quantity surveyor instructing him to take out and prepare bills of quantities and to prepare the specification will be sent to the private architect.

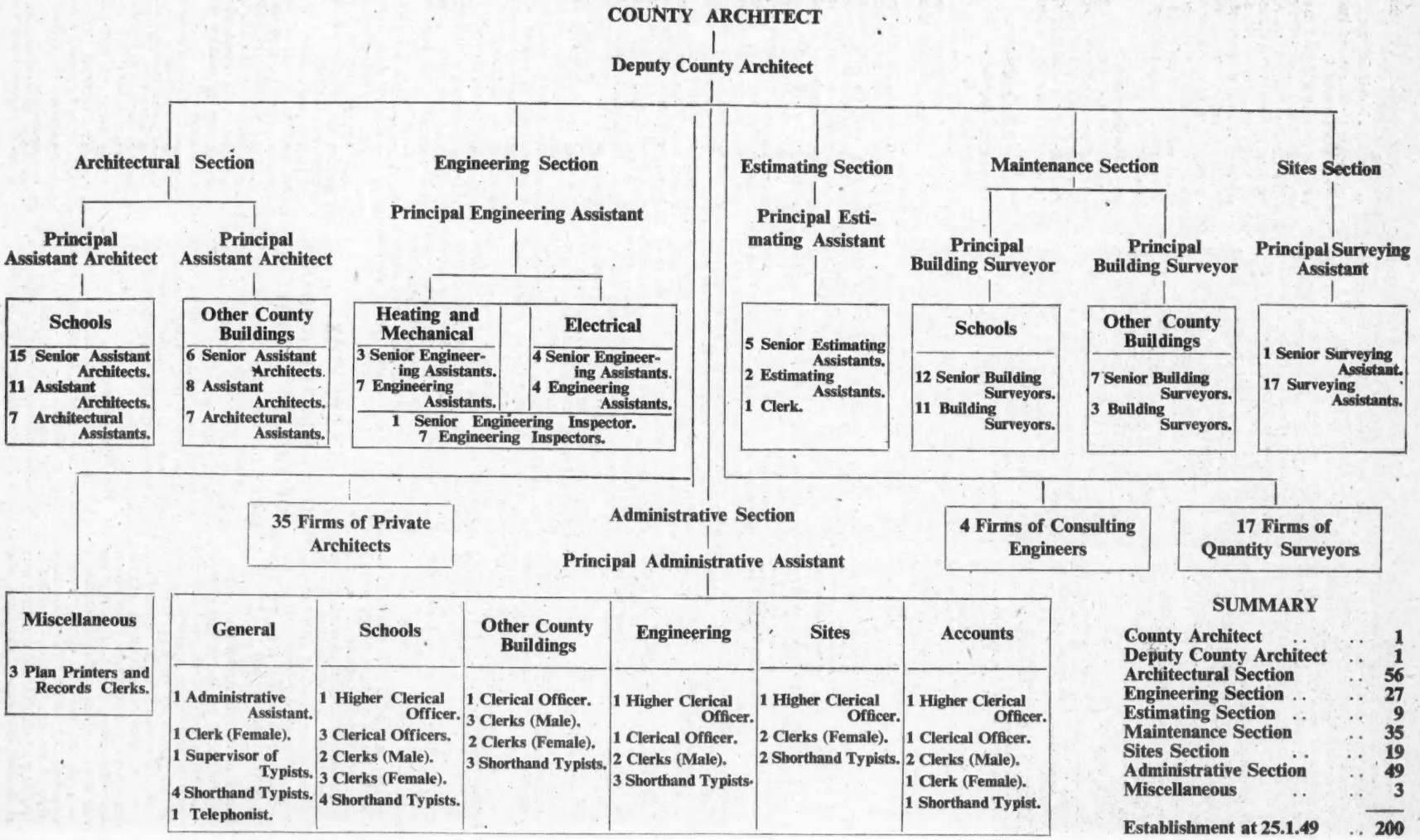
(c) Before such instructions can be issued, however, a copy of the following documents, which have to be supplied to the quantity surveyor in respect of each job, will be sent to the private architect for completion or amendment, as may be appropriate in relation to the works to be executed:—

(i) Form and Conditions of tender and Form and Conditions of contract;
(ii) Standard general conditions and preliminaries to be inserted in bill No. 1 of the quantities;
(iii) Standard clauses to be inserted in the general summary of the bills;

(d) The letter of instruction sent to the quantity surveyor will inform him that he will be furnished with the following documents by the private architect:—

(i) Working drawings;
(ii) An outline specification giving sufficient particulars of the construction of the building, the

ORGANISATION OF THE KENT COUNTY COUNCIL BUILDINGS DEPARTMENT



SUMMARY

County Architect	1
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materials to be used, and schedules of doors, windows and general finishings, to enable a full specification to be prepared;

(iii) One copy each of the quotations in respect of which prime cost items and provisional sums are to be inserted in the bills of quantities, together with a copy of the specification and drawings (if any) upon which each quotation is based. (This applies to schools only.)

(e) The note under paragraph 4 (d) applies equally to communications sent to the quantity surveyor.

6. Clerks of Works.

(a) A copy of the letter written by the County Architect appointing the clerk of works, together with a copy of the instructions issued to him with such letter, will be sent to the private architect.

(b) The clerk of works will be under the control of the County Architect, but will work in collaboration with the private architect.

(c) The clerk of works will, at the end of each week, submit a report (on Form Buildings 7) to the private architect, who should take such action thereon as may be appropriate and then forward the report to the County Architect.

(*Note.*—When a clerk of works is not employed on a contract, the private architect is requested to furnish the County Architect with a fortnightly report on its progress.)

(d) Private architects are invited to submit, at the appropriate time, the names and addresses of clerks of works who are disengaged and who are considered suitable for employment by the Council. If a clerk of works is required to supervise more than one contract, travelling expenses are paid for journeys between the works supervised.

7. Tarpaving Works.

(a) The work of excavating, levelling and drainage ready to receive the hardcore and tarpaving or tarmacadam will form part of the building contract.

(b) The provision of hardcore and the laying of tarpaving or tarmacadam to roads, paths or playgrounds will be carried out by a firm with whom the Council have entered into a contract on special terms. The private architect will be required to supervise this work, and fees will be paid on the value of such work.

8. Estimate of Cost of Works.

(a) This should be submitted on Form Buildings 6 (adapted as necessary), copies of which may be obtained from the County Architect.

(b) The estimates in respect of the electrical installation (including cable), heating, and hot and cold water services, will be obtainable by the private architect from the consulting engineer.

(c) The estimates in relation to incidental expenses will be computed by the County Architect, who will then let the private architect know the total estimated cost of the works.

9. Quotations from Specialist Sub-Contractors.

(a) The private architect will be required to prepare the technical portion of specifications for specialist works or goods for which prime cost items or provisional sums will be inserted in the bills of quantities.

(b) Copies of the following documents should be obtained from the County Architect for inclusion in such specifications:—

(i) General conditions applicable when quotations are invited from "nominated sub-contractors";

(ii) General conditions applicable when quotations are invited from "nominated suppliers."

(c) For county buildings, competitive quotations will be obtained by the County Architect, who will refer such quotations to the private architect for examination and report as to those recommended for acceptance.

(d) For school buildings, competitive quotations should be obtained by the private architect in each case from not less than three specialist sub-contractors selected, when possible, from the Council's approved list of specialist sub-contractors, a copy of which may be obtained from the County Architect. Where there is no approved list, the private architect may select the sub-contractors himself. The quotations obtained should be examined and submitted to the County Architect with a report thereon advising him as to the quotations in respect of which it is proposed to arrange for prime cost items or provisional sums to be included in the bills of quantities.

10. Specifications (Building Works).

(a) The private architect will be required to prepare and furnish to the quantity surveyor an outline specification prepared on the lines indicated in paragraph 5 (d) (ii) of these notes.

(b) In accordance with the conditions of contract the contractor must be furnished with two copies of the complete specification, but such specification is not a contract document. Therefore, no general conditions or preliminaries are inserted in the specification, but reference is made therein (in clause 1) to the fact that they are included in bill No. 1 of the quantities.

(c) The quantity surveyor will submit the draft specification to the private architect for his approval, or amendment, as the case may be.

(d) When the draft specification is returned to the quantity surveyor, he will arrange for twelve copies to be made by the firm who printed the bills of quantities. The order for these specifications will be issued by the County Architect, through the County Supplies Department.

(e) The twelve specifications will be sent to the County Architect, who will forward one copy to the private architect.

11. Invitation of Tenders (Building Works).

(a) Tenders will be invited by the County Architect from firms on the Council's approved list of building contractors in accordance with the procedure approved by the Buildings Committee.

(b) Tenders will be addressed to the Clerk of the County Council or the County Education Officer, as may be appropriate, and at the same time contractors will be required to deposit with the County Architect their priced bills of quantities.

12. Bills of Quantities.

(a) The County Architect will place an order with a firm of lithographers, through the County Supplies Department, for the number of copies of bills of quantities required (which will depend upon the number of contractors who desire to tender). A copy of such bills will be sent to the private architect.

(b) The County Architect will arrange for the priced bills of quantities of the lowest tenderer to be sent to the quantity surveyor for checking.

(c) When a contract is entered into the priced bills of quantities (which will not be opened) of all other contractors will be returned to them by the County Architect.

13. Building Contract.

(a) A copy of the Council's form of contract (for use when quantities form part of the contract) may be obtained from the County Architect.

(b) The contract will be entered into by the County Council or the Education Committee, as may be appropriate. For this purpose the private architect should supply to the County Architect two sets of ¼-in. scale working drawings, including the site plan.

(c) If the contractor gives written notice to the private architect of the happening of any of the events mentioned in Clause 18 of the Conditions of Contract, and furnishes particulars of any resultant delays, he should advise the County Architect as to the extension of time which it would be fair and reasonable to allow the contractor for the completion of the works. The County Architect will then complete and send Form Buildings 3 to the contractor, and a copy thereof to the private architect. A copy of this form may be obtained from the County Architect.

(d) As soon as in the opinion of the private architect the whole of the works are completed, or any part or section of the works is both completed and taken into use, he shall notify the County Architect of the date thereof. The County Architect will then issue a certificate of completion, or partial completion, on Form Buildings 9, a copy of which will be sent to the private architect. A copy of this form may be obtained from the County Architect.

14. Interim Certificates.

The quantity surveyor will survey works in progress, take particulars and report for interim certificates (on Form Buildings 57) to the County Architect, who will issue certificates based on such reports.

15. Variations of the Building Contract.

(a) The private architect has no authority to issue variation orders. He should inform the County Architect immediately of any variation of or addition to the works which, in the opinion of the private architect, is necessary or desirable, and submit particulars thereof to the County Architect on Form Buildings 23, copies of which may be obtained from the County Architect. The estimated cost of such variation or addition should be shown on the draft order.

(b) If the County Architect approves of such variation he will issue a variation order to the contractor on Form Buildings 26, a copy of which will be sent to the private architect, the quantity surveyor and the clerk of works.

(c) The private architect should state on the draft variation order whether the work is to be carried out at daywork rates (in accordance with Clause 9 (c) of the conditions of contract). In such case he should obtain from the contractor, within 14 days of the execution of the works, daywork accounts (in quadruplicate on Form Buildings 42) properly completed, and if the accounts are correct certify all four copies and forward them to the County Architect. The daywork accounts will then be signed by him, and one copy of each will be sent to the private architect, the quantity surveyor and the clerk of works.

(d) The estimated cost of any variation or addition submitted on Form Buildings 23 should be prepared by the private architect, as the County Council will not be prepared to meet the fees of quantity surveyors for this work.

(e) Draft Variation Order No. 1 should be prepared as follows:—

OMIT the following P.C. items and provisional sums:

Bill No.	*Page No.*	*Item.*	*Amount* £ s. d
		Contingencies	
		Total	

ADD—Please enter into sub-contracts with the undermentioned firms. To enable you to do so, I enclose—

(i) Three copies each of the specifications and drawings (if any) upon which their quotations were based.

(ii) Three copies of each of the quotations.

Name of Firm.	*Work or Goods.*	*Amount of Quotation.* £ s. d.

(f) It is not intended that draft variation orders should be prepared for every small item, and a number of items may be grouped together on one order at the discretion of the private architect.

(g) It is emphasised that the reason for the preparation of variation orders is to give a reasonably accurate picture of the financial position of the contract at any time during its execution.

Technical.

(Applicable to Schools only)

16. Documents to be furnished with instructions to prepare schemes.

When he is given instructions to prepare the scheme the private architect will be furnished with the following information, when applicable:—

(a) An extract from the ordnance survey showing the site, with an indication of the suggested siting of the buildings.

(b) A schedule of the accommodation required.

(c) A chart showing "target" dates to be aimed at.

(d) A "history sheet," to be adapted as may be required.

A schedule of engineering equipment for schools is being prepared and will be issued as soon as possible.

17. Trial Holes.

(a) When necessary, arrangements should be made by the private architect for a builder to dig and protect with fencing the number of trial holes which the private architect considers to be necessary. They should be properly filled in after the contractors have inspected the trial holes in connection with the preparation of their tenders.

(b) The account of the builder, duly certified by the private architect, should be submitted to the County Architect for payment.

(c) Private architects are requested to submit to the County Architect a technical report and dimensioned diagram on the nature of the soil and sub-soil, and the levels of water (if any) disclosed by the trial holes.

18. Stages of Preparation of Schemes.

(a) The preparation of *single line* sketch plans to 1/500th, or 1/16th in. scales as a basis for discussion with the County Education Officer and his Inspectors. It is suggested that the private architect may wish to attend such discussion. If so, he should inform the County Architect accordingly so that he can make arrangements in advance with the County Education Officer for a suitable date for the discussion to be held.

When these sketch plans have been approved in principle, prints will be required for the following:—

1. County Education Officer.
2. Divisional Education Officer.
3. Ministry of Education (2 copies).
4. H.M. Inspectors (2 copies).
5. County Architect.
6. Local Authority, for informal approval under the Town Planning Acts.

If it is necessary to submit plans under the Restriction of Ribbon Development Acts, the private architect will be informed. The number of copies required will be notified in each case.

A very brief report is required, describing the planning of the school in relation to site or other problems, with an indication of the type of construction to be adopted to be submitted with the plans, giving also a forecast of the cost of the building, with forecast of steel and timber requirements.

(b) Working drawings are to be proceeded with on receiving the approval of the Minister of Education to the preliminary plans or on receiving authority from the County Education Officer to assume approval. Whilst the working drawings are being prepared there should be consultation with officers of the Buildings Department in relation to fire precautions to be incorporated in the scheme. In the meantime, the private architect should explore fully the position in regard to the availability of materials. Questions in regard to materials may be directed to the Regional Materials Officer of the Ministry of Works.

19. Construction and Planning.

(a) Reference should be made to:—

(i) Regulations Prescribing Standards for School Premises, 1945.

(ii) The Memorandum on the Building Regulations.

Both published by H.M. Stationery Office, Kingsway, W.C.2, price 6d. each.

(b) "Notes on the planning of school buildings" have been prepared for use in this office, and a copy, with the relevant drawings, can be obtained from the County Architect.

(c) Primary schools should generally be in single-storey construction.

(d) Secondary schools may be partly in two or more storey construction.

(*Note*: Where the latter schools are required to be built in stages, it is suggested that the practical rooms may be planned for the ultimate size, but temporarily sub-divided to take the immediate accommodation required.)

(e) The utmost flexibility in planning must be aimed at, always bearing in mind the possibility of extensions.

(f) "General decorative layout to be shown"—this need not be indicated in the first stages. A block plan indicating this will be required as a basis for discussion with the County Lands Officer, who will be responsible for the planting and maintenance of grounds.

(g) Unless otherwise instructed, assembly halls in primary schools will not be designed with a permanent stage. A temporary platform stage only will be allowed, and the minimum area of the hall (1,800 sq. ft.) may, therefore, be increased to 2,000 sq. ft.

(h) If assembly halls are likely to be required for use for community purposes, this fact will be stated in the schedule of accommodation.

(i) It is essential that in planning the children's cloakrooms and sanitary accommodation particular attention should be paid to the free flow of children through the rooms. Culs-de-sac *must* be avoided.

In larger schools, cloakrooms and lavatories must be dispersed, i.e., where drainage conditions permit.

20. Record Plans.

A copy on tracing cloth for preference (or a negative print) of the working drawings, amended as necessary to show the building as carried out, is to be deposited with the County Architect at the end of the contract. The clerk of works will be instructed to prepare and submit through the private architect, plans showing drainage as laid, and a plan of the services, i.e., lines of mains from road into building; also gas and cold water services within the building, marking clearly all stop cocks, steam traps and positions of meters.

Technical.

(Applicable to County Buildings only)

21. Documents to be furnished with instructions to prepare schemes.

The following documents will be furnished to the private architect when he is instructed to prepare the scheme:—

(a) A site plan, usually to 1/500th scale.

(b) A schedule of the accommodation required.

(c) An outline description of the engineering services necessary.

(d) Where necessary, a schedule of the equipment to be included in the scheme.

(e) A list of the dates of the Committees to which the scheme will be submitted.

22. Trial Holes.

Where trial holes are considered necessary at a hospital or institution, they will be dug by the artisan staff at those premises. In all other cases, the procedure mentioned in paragraph 17 should be followed.

23. Stages of Preparation of Schemes.

STAGE I—PRELIMINARY SKETCH PLANS. (a) These are required sufficiently developed to serve only as a basis for discussion with the County Officer concerned, and should be to 1/16th or 1/8th scale according to the size and nature of the work, and should include a section and notes of materials. It is suggested that the private architect may wish to attend this discussion, and if so, he should inform the County Architect accordingly, so that arrangements can be made with the other County Officers concerned for a suitable date for the discussion to be held.

(b) Following approval to the scheme by the County Officers, the local authority should, if it is considered necessary at this stage, be approached for informal approval.

(c) Two copies of the approved sketch plan should then be submitted to the County Architect for transmission to the appropriate Government Department for approval in principle, together with an estimate of the cost, sub-divided where possible, as indicated in Form Buildings 6.

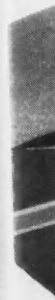
(d) Where possible the private architect should also send a "gold-back" or reverse negative so that prints can be obtained by the County Architect as required, without delay.

(e) Copies of the scheme will also be required for formal submission to the Local Authority.

STAGE II—WORKING DRAWINGS AND OUTLINE SPECIFICATION. (f) The private architect will be advised when approval in principle has been obtained to the scheme from the Government Department concerned, and working drawings may then be proceeded with, and an outline specification prepared as mentioned in paragraph 5 (d) (ii).

24. Record Plans.

The procedure mentioned in paragraph 20 should be followed.



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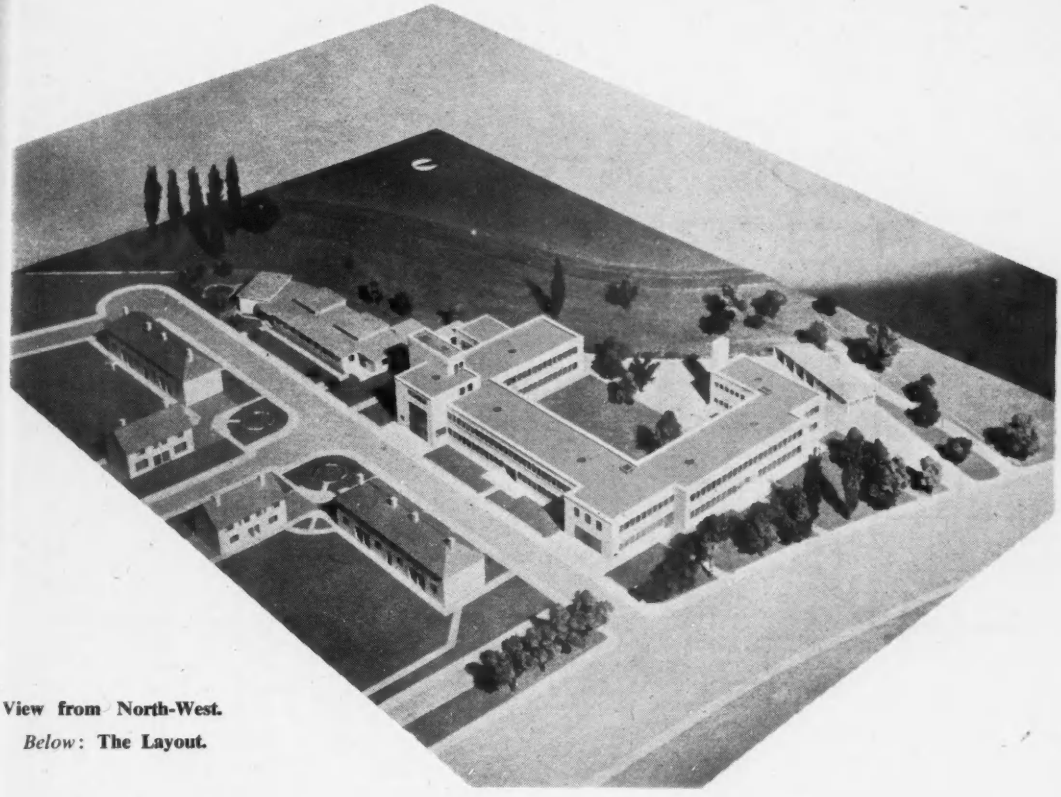


View from North-West.

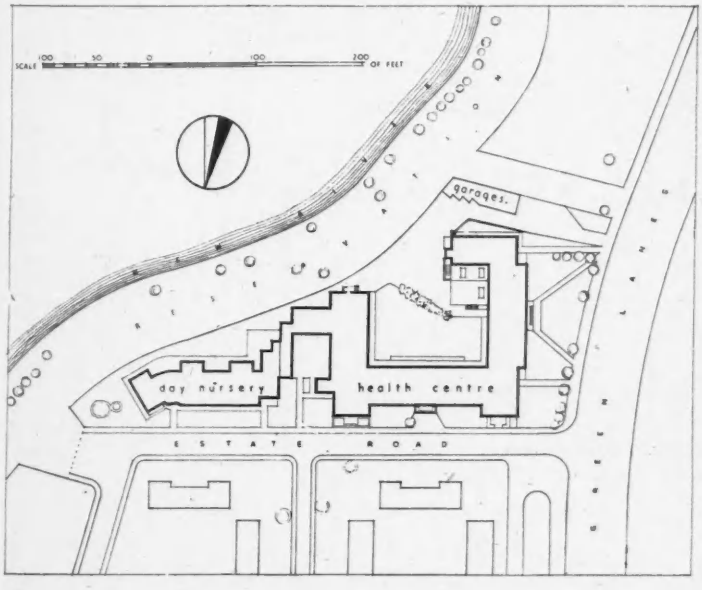
Below: The Layout.

WOODBERRY DOWN HEALTH CENTRE AND DAY NURSERY FOR THE LONDON COUNTY COUNCIL

Designed by the Council's Architectural Staff

W. J. DURNFORD, F.R.I.B.A., SENIOR ARCHITECT

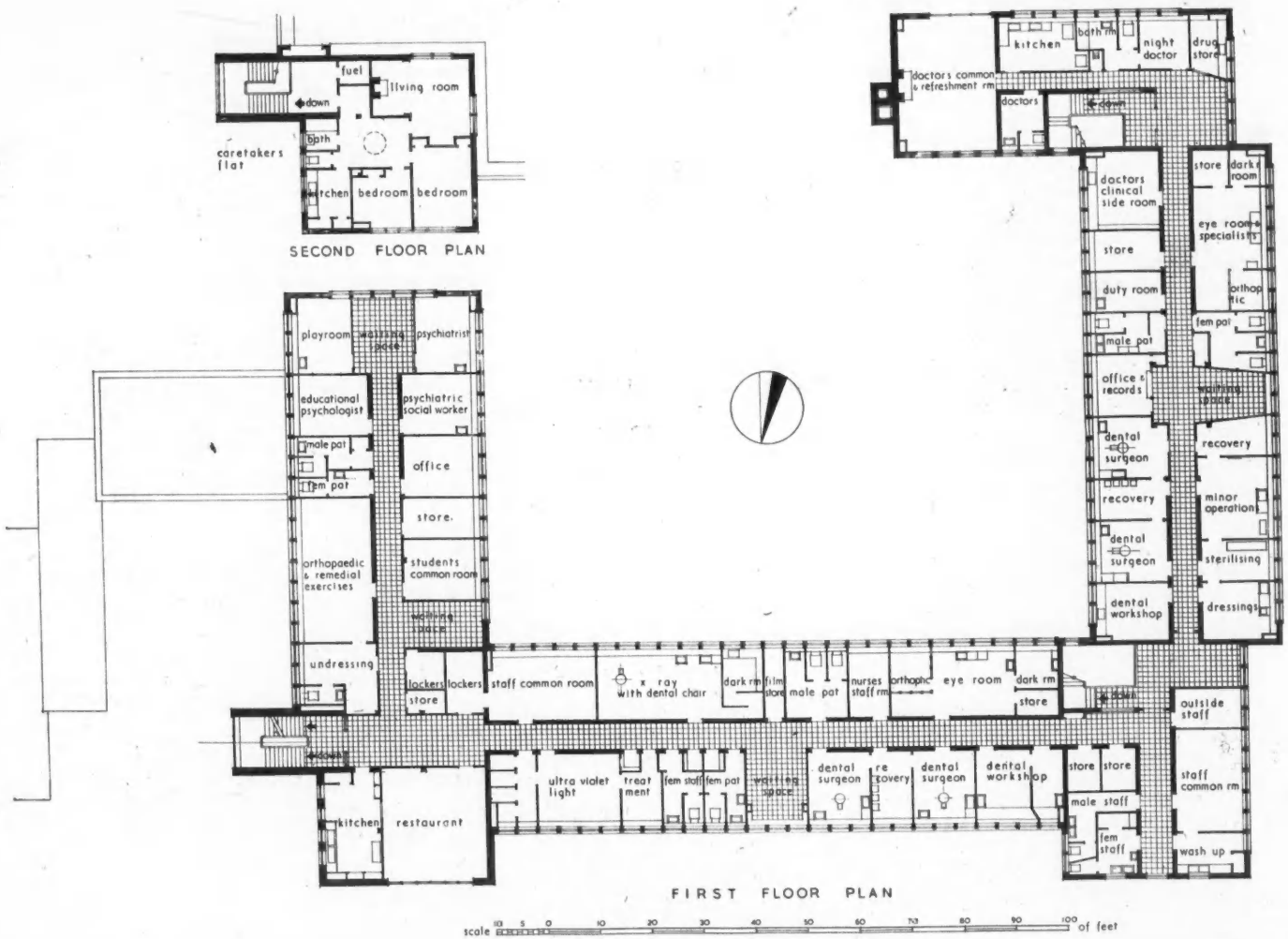
A. E. MILLER, F.R.I.B.A., ARCHITECT GRADE I



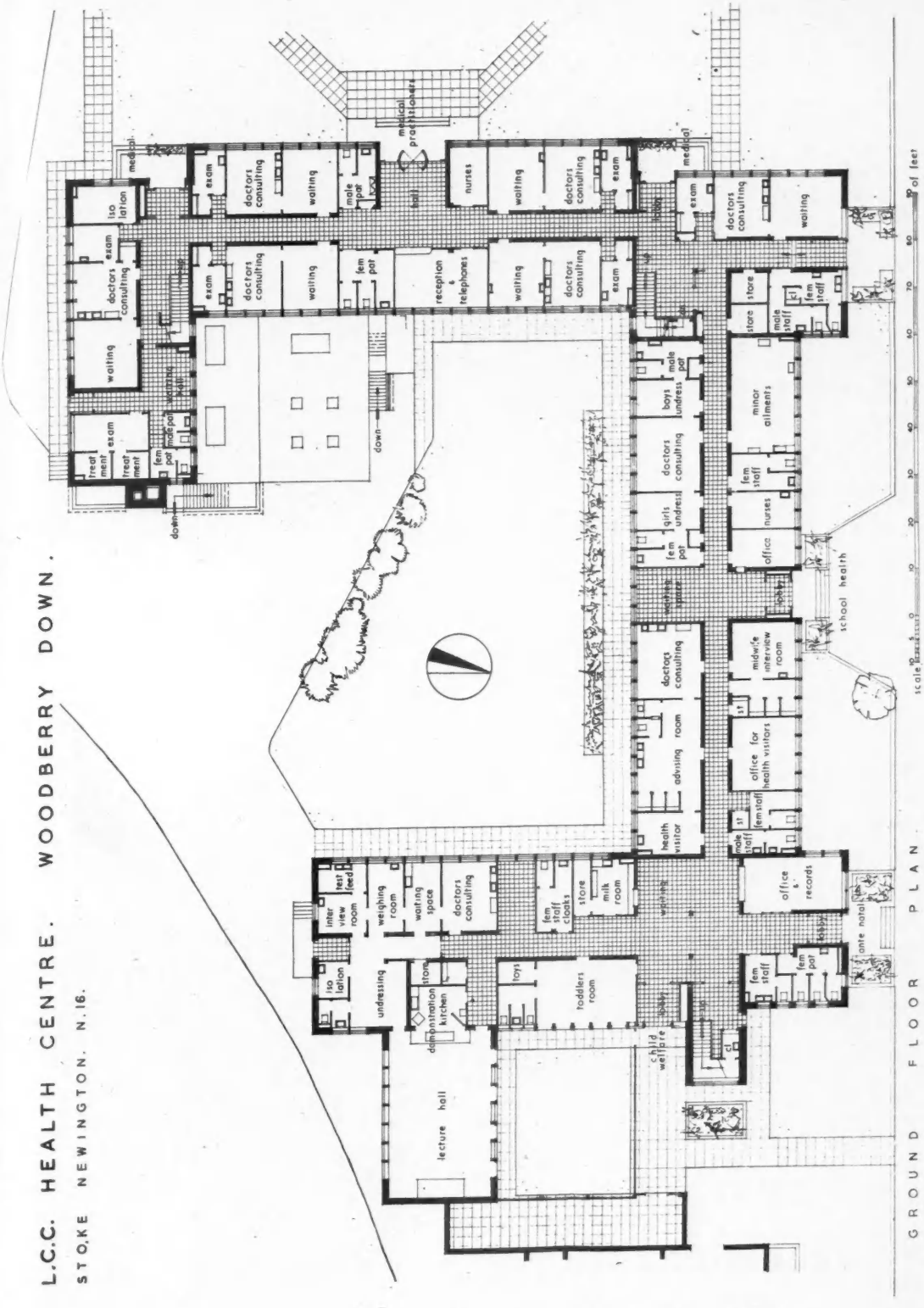
IN May last the London County Council approved proposals for carrying out some of its duties under the N.H.S. Act, 1946. One of these was the building of a Health Centre at the Council's Woodberry Down Estate, Stoke Newington, the plans and a model of which are now illustrated. Estimated to cost £187,275, it will be the first of its kind in London and the first in the whole country to be approved by the Minister of Health. Under one roof will be brought ante- and post-natal clinics, a child welfare clinic, a school treatment centre, other local health services and general practitioner and dental services. The area which the new Centre will serve will eventually have a population of 18,000, but the Centre is expected eventually to serve a much wider area.

The Centre fronts Green-lane on the west and occupies (with the day nursery which is to adjoin it) about one and a half acres, of which the nursery takes up one-third acre. About 60 per cent. of the land remains open. Five units will be accommodated in the Centre: a medical practitioners' and dental surgeons' unit; a school health unit; a child welfare unit; an ante-natal unit; and a remedial exercises and child guidance unit. The disposition of these parts may be seen on the plans.

To the east of the Centre is the day nursery, built with children's rooms facing the green open space. This will



WOODBERRY DOWN.


L.C.C. HEALTH CENTRE. WOODBERRY DOWN.
STOKE NEWINGTON. N.16.
GROUND FLOOR PLAN.
scale
of feet
medical practitioners
doctors consulting
waiting
exam
isolation
male pat
fem pat
reception & telephones
nurses
hall
lecture hall
demonstration kitchen
undressing
toddlers room
child welfare
weighing room
waiting space
test feed
inter view room
fem staff cloaks
store
milk room
health visitor
advising room
boys undress
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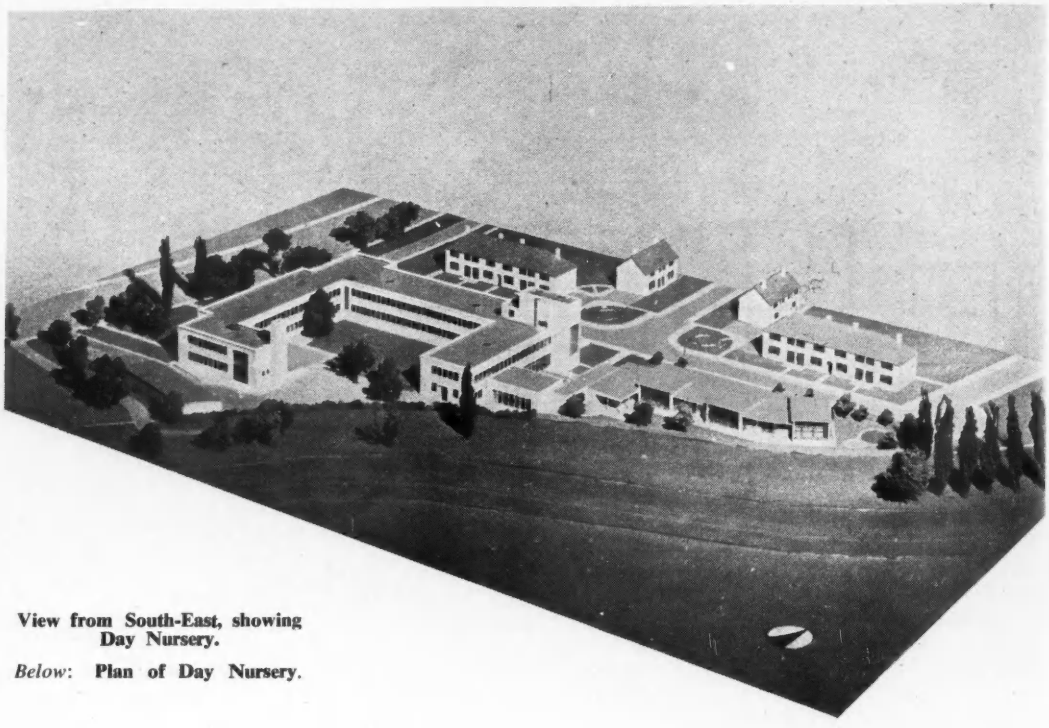
fem staff
male staff
office
store
down

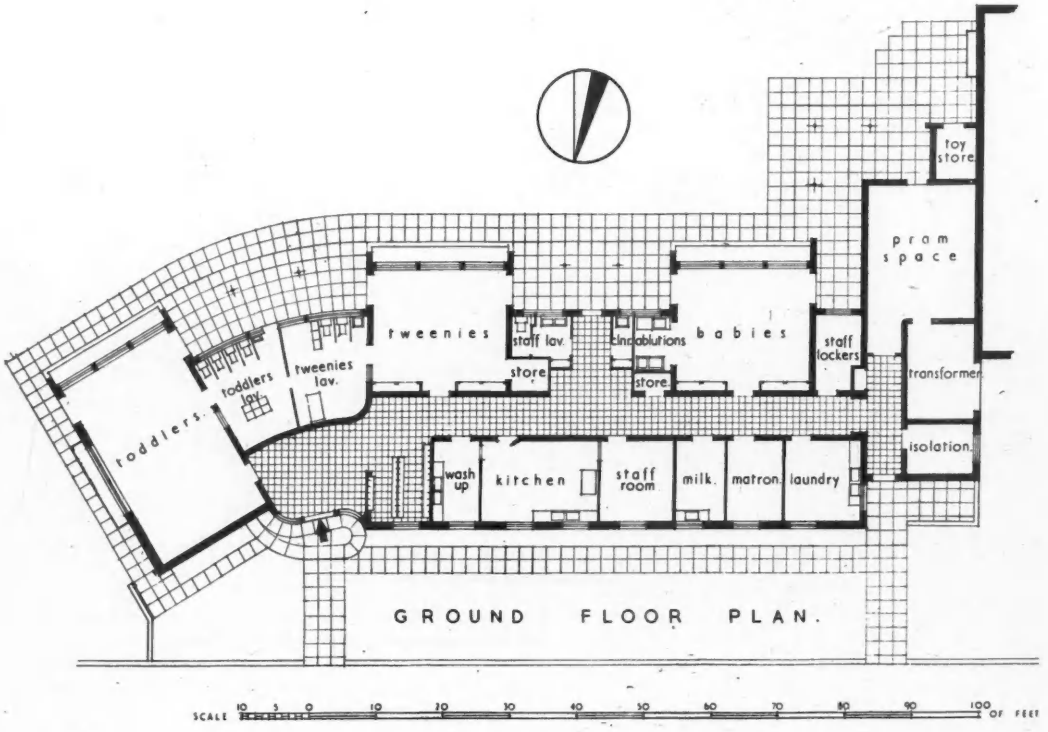


View from South-East, showing Day Nursery.

Below: **Plan of Day Nursery.**

be approached from the quiet side road. Of the two entrances, one leads to the main entrance hall and the other to the pram space and main corridor.

Staff and refreshment rooms are provided, with sanitary accommodation for all units. There is a caretaker's flat on the second floor. The boiler-house is in the basement. It is hoped that the Centre will be ready within two years. Tenders are to be invited for the building at once.



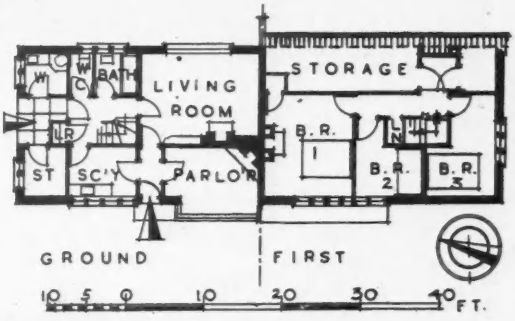
WOODBERRY DOWN HEALTH CENTRE, FOR LONDON COUNTY COUNCIL

Main (West) Elevations.

A PAIR OF AGRICULTURAL COTTAGES, WOTTON-UNDER-EDGE, GLOS.

BURROUGH AND HANNAM, ARCHITECTS

THE site selected by the farmer for this pair of agricultural cottages at Kite's Nest Farm, Wotton-under-Edge, Glos., faces nearly due west, and to the east is a very fine view over a spur of the Cotswolds and Nibley Monument. The cottages are therefore planned so that the living rooms have large windows with low cills and unobstructed areas of clear glass overlooking the back gardens to the view beyond. The parlours are placed conventionally in the front and the sculleries are also in the front. Outside the back doors are wash-rooms and



Rear Elevations.

stores, and the bathrooms and w.c.s are immediately inside the back doors.

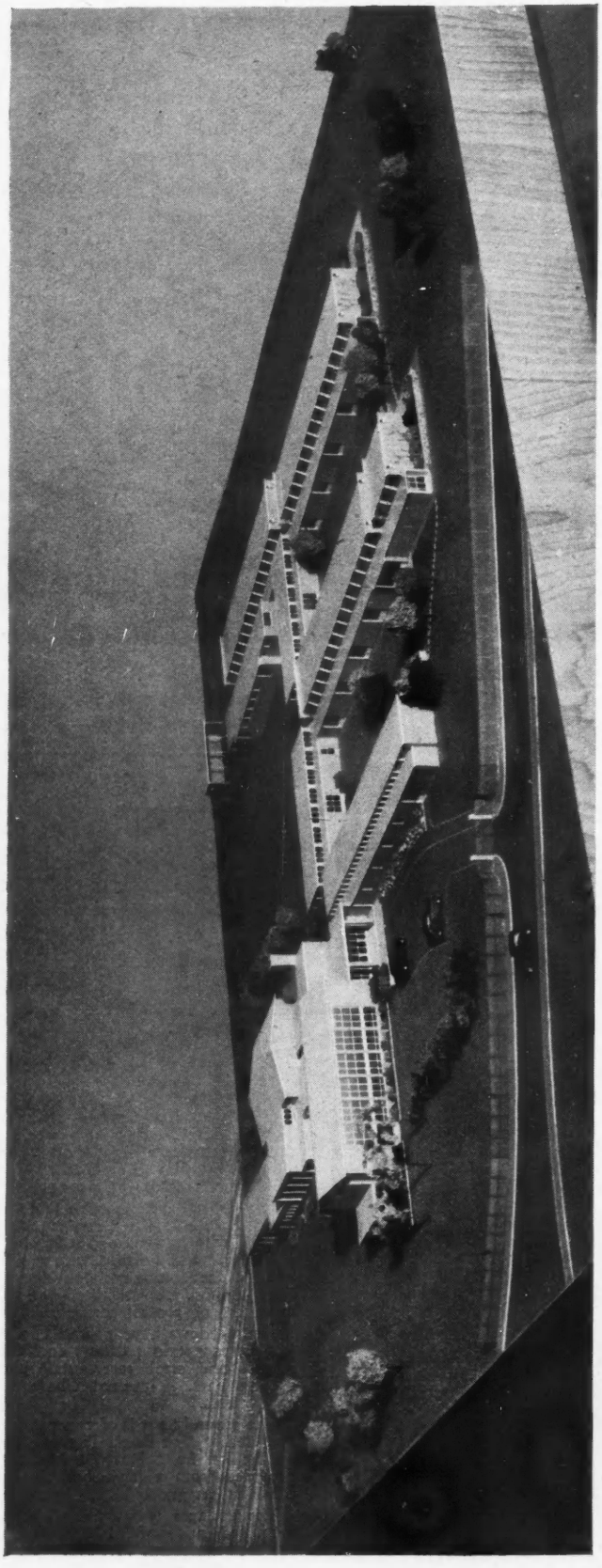
The section with ridge off-centre has been chosen to reduce the cube, and also to provide a large storage area (not included in the statutory 1,000 sq. ft.) for potatoes, onions, etc.

The walls have two skins of 4-in. concrete blocks, cast on the site, coated with stucco applied with a wood float and finished with sacking. The roof has felting and double-rolled, dun-coloured Roman tiles, while the eaves are of precast concrete.

The windows have precast concrete frames, except in parlours and living rooms, and steel casements without glazing bars. Internal cills are of quarry tiles.

The ground floor is of concrete, with coloured asphalt finish. Timber is used on the first floor. Hot water supply is provided from a back boiler in the combination grate.

The cottages were built within the permitted price of £1,300 each, and the contractor was Mr. S. Grimes, of Wotton-under-Edge.



RAMSGATE (MANSTON ROAD) COUNTY PRIMARY SCHOOL, FOR THE KENT EDUCATION COMMITTEE

Designed by
HOWARD V. LOBB, F.R.I.B.A.,
in association with
SIDNEY H. LOWETH, F.S.A., F.R.I.B.A., KENT COUNTY ARCHITECT

THE school, construction of which is expected to start in May of this year, is designed to accommodate 480 pupils. Until a proposed infants' school on an adjoining site is built, a wing of the primary school will be set aside for infants.

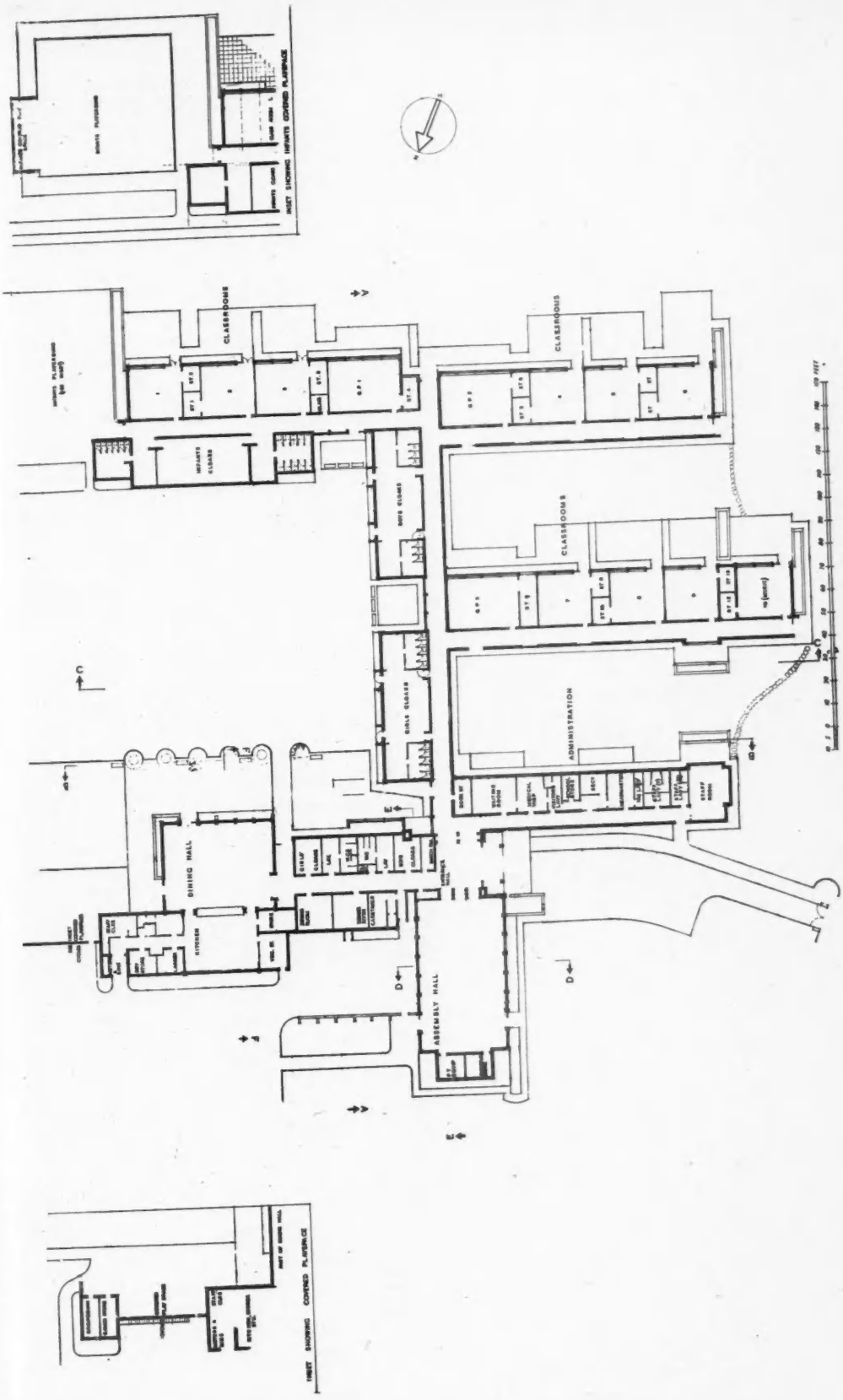
SITE: The site is on the north-west outskirts of Ramsgate, and a housing estate is at present being developed by the Ramsgate Borough Council to the north and west. The ground rises to the east, where there is a sports field belonging to the Education Committee; beyond this is a railway, and along the south boundary is the B Class Manston Road. The school has therefore been sited in the north-west corner of the site, nearest to the new houses from which most of the children will come and furthest away from the noises of the railway and main road. The ground in this corner is fairly level, and the estate roads provide good access for food and fuel deliveries. The Borough Council's estate layout includes an open space at this point to set off the school.

PLANNING: The classrooms are ranged in parallel blocks facing south-south-east, the cloakrooms and lavatories being interposed between the classroom blocks and the playground, where they form a sound barrier and are readily available during breaks and in classtime. The main entrance faces the chief approach from the housing estate, and the administration wing is immediately adjacent, for the convenience of visitors. The kitchen and boiler house are placed at the north end of the group of buildings. with combined access independent of the main approach to the school.

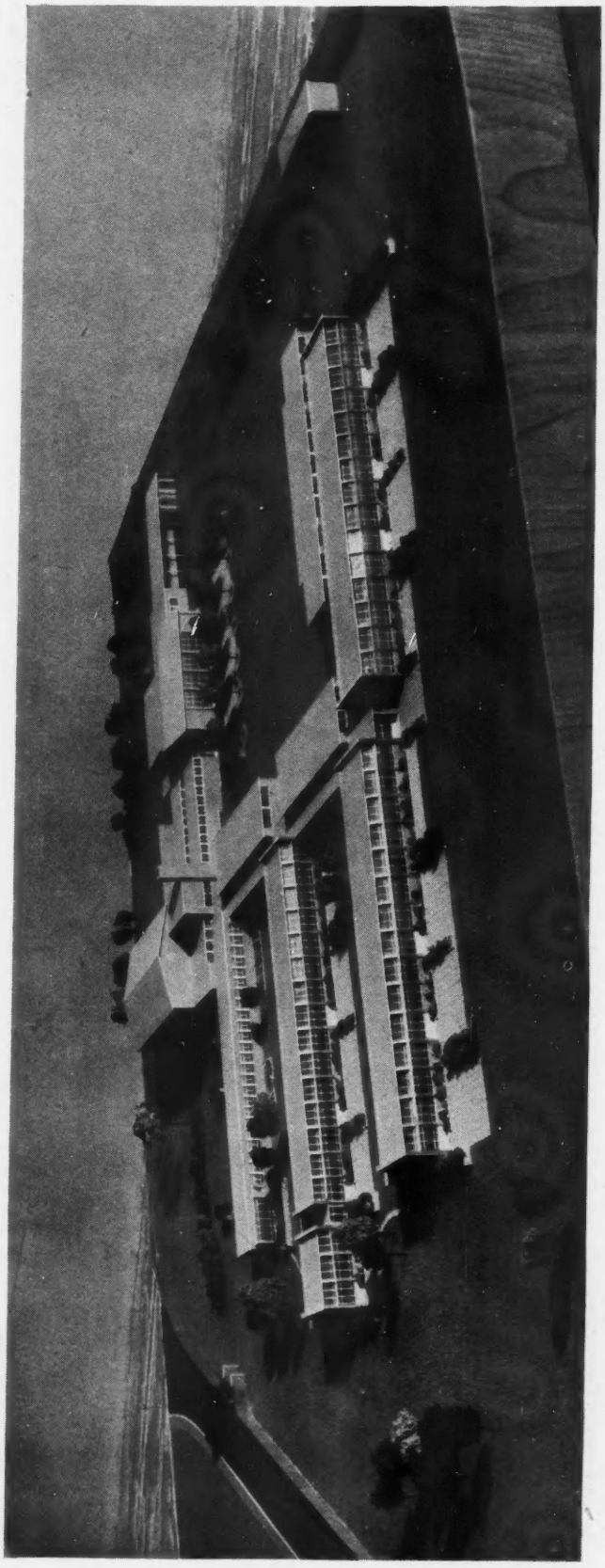
CONSTRUCTION: The construction generally is of brick load-bearing walls and piers with flat roofs. It is designed to economise in site labour and in timber and steel, and to facilitate any alterations that may become necessary in course of time.

FOUNDATIONS: Reinforced concrete ground beams are supported on mass concrete bases formed in holes dug into the ground at approximately 8-ft. centres.

EXTERNAL WALLS: 11½-in. cavity walls in lime-cement mortar are used for external walls. The external facings will be selected yellow stocks with horizontal joints pressed in with a rod to give a convex section. All dimensions are multiples or subdivisions of brick sizes. The piers to the south walls of the classrooms are of brick supporting wide transoms, above which are short precast concrete columns set on the rake to follow the inward slope of the clearstorey windows. Corresponding raking columns occur in the clearstoreys on the north sides of the classrooms. In the cloakroom blocks the



RAMSGATE (MANSTON ROAD) COUNTY PRIMARY SCHOOL. The plan.



windows are set high up, and are separated by upright precast concrete mullions. All precast concrete work will be finished externally with cement paint.

The flower boxes and the walls to the entrance portico will be faced with pebbles from the beach, continuing, as does the use of stock brick, local building traditions of Ramsgate.

ROOFS: The precast concrete columns or mullions just described support rolled steel joists which in turn carry asbestos cement cavity decking units 8 ft. or 8 ft. 3 in. long. Similar decking units span from wall to wall across corridors. Over the assembly and dining halls the decking is supported on welded steel lattice trusses. The roof finish will be ¼ in. asphalt on felt underlay, topped with white spar to reflect the heat of the sun.

CEILINGS: The ceilings to classrooms, assembly hall and dining hall will be of fibre board supported on extruded aluminium sections hung from the steel beams or roof trusses. Other ceilings will consist of an insulating spray finish applied direct to the soffits of the asbestos-cement decking units.

WINDOWS: The windows will be purpose-made, of galvanised steel, and are to have approximately 50 per cent. opening portions; it is considered that it is more efficient to restrict the extent of the opening vents, but to provide them with gearing, than to make every pane to open but to rely upon long-arm operation.

Careful study of daylight curves led to the conclusion that, unless top-lighting were to be accepted, it was essential to slope the classroom clearstoreys inwards, so as to obviate the shadow normally cast by the cill; at the same time no projection could be tolerated at the clearstorey head. The sloping clearstoreys have been repeated on the south side of the classrooms, but here deep piers and a wide transom and cornice have been designed to admit sunshine during the winter and to exclude it during the hottest time of day at midsummer.

PARTITIONS: All half-brick partitions will be attached to structural piers and walls with metal ties instead of being bonded in, so that future alterations can be made with as little disturbance as possible.

INTERNAL FINISHES: The floors to teaching rooms will be coloured hardened asphalt; to cloakroom blocks and corridors, granolithic; to the dining hall and administration, wood block; to the assembly hall, wood strip; and quarry tile to the kitchen. The walls are generally fair faced, distempered, above a facing brick dado. The cloakroom blocks will have cement glazed dadoes to door height. The walls in administration block will be plastered and distempered.

The school has been designed in collaboration with the Kent County Architect, Mr. S. H. Loweth, F.S.A., F.R.I.B.A., by Mr. Howard V. Lobb, F.R.I.B.A., the assistant in charge of the job being Mr. A. P. Hodgson, A.R.I.B.A. The quantity surveyors are Messrs. C. E. Ball and Partners, FF.R.I.C.S., and the model from which the photographs are taken was made by Mr. E. J. Thring, A.R.C.A.

RAMSGATE (MANSTON ROAD) COUNTY PRIMARY SCHOOL, FOR THE KENT EDUCATION COMMITTEE

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ROMAN CHESTER

Dr. Richmond on the Goss-street Excavations

THE results of excavations carried out by the Chester and North Wales Architectural, Archæological and Historic Society in May and June, 1948, were described by DR. I. A. RICHMOND, F.B.A., V.P.S.A., Reader in Roman and British Archæology, at King's College, Newcastle-on-Tyne, who was in charge of the work, in a lecture to the Society at Chester recently.

The site available for examination was a strip of vacant ground in Goss-street, slightly west of the position occupied by the headquarters building of the Roman fortress, said Dr. Richmond. A wholesale clearance of the site was out of the question, and the problem was to get as much information as possible out of a few deep sections. It was soon found that the area was traversed by a Roman side street, running from north to south and dividing the headquarters building from a barrack block of normal legionary pattern.

The trial trenches disclosed that the earliest barrack was constructed in wattle and daub, with a timber frame. Its floors were laid in hard-beaten sand, and in the body of the first floor laid down was found a freshly minted coin of A.D. 72. "This," Dr. Richmond continued, "gives a date for the foundation of the fortress a year or two after 72. It is consistent with the lead ingots of A.D. 74 found in the river port of the Rodec, and with the lead pipes of A.D. 79 which mark the completion of a water supply. The building of the fortress may be assigned with confidence to the years A.D. 74-79, and not earlier, as has sometimes been suggested. It is now clear that the earliest buildings were of timber and not of stone.

"The rebuilding of the barrack in stone comes later and goes with a new street level, dated by a heavily worn coin of A.D. 78, in the last decade of the first century at the earliest. Part of an inscription of Trajan dating after A.D. 103 marks the rebuilding of the defences of the fortress in stone. The barrack-block, however, though built with stone foundations, had a half-timber superstructure.

"The hard, sandy floor was raised by successive accumulations and honeycombed with rubbish tips in which from time to time legionaries buried their refuse. Much refuse was also trodden into the floors, indicating a lower standard of hygiene than often obtained in other Roman military establishments of the period.

No Evidence of Destruction.

"The third century and later levels had almost everywhere been cleared away, but it was evident that the same barrack walls had continued in use. Street and floor levels had been laid anew and a surface prepared for them by a thick spread of clear brown sand. The surfaces upon which this levelling stratum had been laid down were entirely devoid of relics of destruction such as burnt timber, fallen roof tiles and masonry.

"Hitherto it had been thought that Chester, like York and so many forts further north, suffered devastation in A.D. 197, when the Mætæ of Southern Scotland wrecked Hadrian's Wall and broke into the Roman province. But there is no evidence of destruction here, and in fact the repairs for which the sandy spread was a preparation, were not put in hand until after A.D. 222 at the earliest, since a coin of Elagabulas (A.D. 218-222) was found in the sandy spread. This amply confirms the negative evidence in regard to destruction and indicates that the repairs were routine repairs carried out at leisure a generation later than the repair of war damage executed elsewhere after A.D. 197. The drastic repairs on the north wall of the fortress, also hitherto connected with the destruction of 197, are probably a century later.

"On the other side of the street from the barracks the trial trenches revealed a massive wall four feet thick and the foundations of the columns belonging to the colonnade. These imply a colonnade about 20 feet in height, and analogous plans indicate that it flanked the great front courtyard of the headquarters, surrounded by offices set back to back, which were served from internal and external colonnades. The external colonnade is, however, a rarity, and quite unsuspected at Chester. The paved floor of the inner colonnade was found over three feet above the level of the existing street."

Important evidence of the total reconstruction of the building after A.D. 222 was also obtained, but no evidence was available as to what had happened to the colonnade at this time. In view of the subsequent treatment of the ground, which was honeycombed with cellars and earlier rubbish pits, there was cause for congratulation that so much had been discovered, concluded Dr. Richmond.

CARLTON HOTEL SITE

The Future of the Royal Opera Arcade

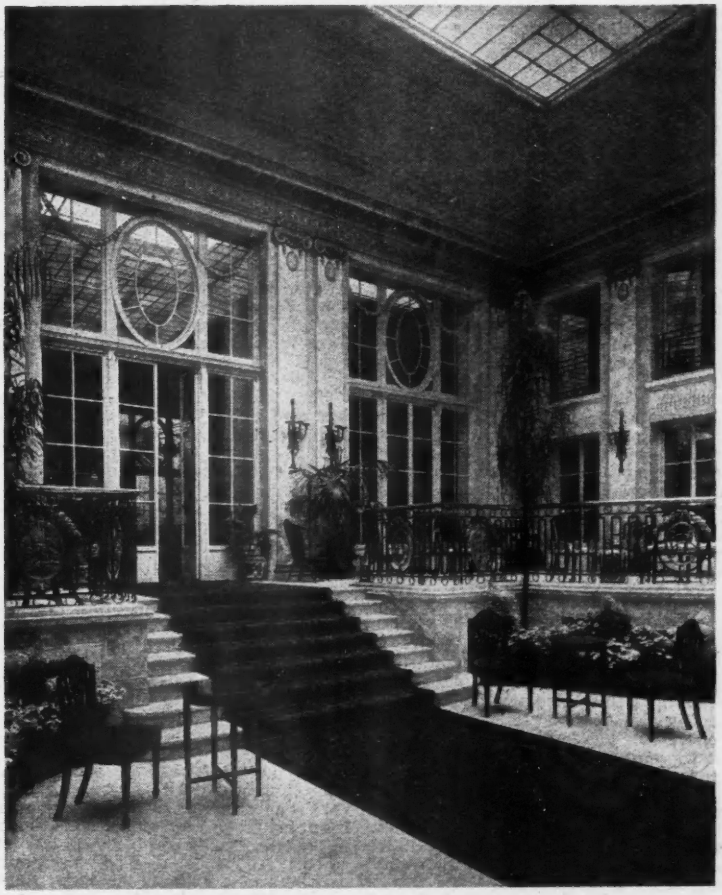
THE acquisition of the Carlton Hotel and His Majesty's Theatre by the New Zealand Government, who propose to build a new headquarters office block on the site as soon as the leases have expired, has raised a question regarding the future of the Royal Opera Arcade.

Designed by Nash and Repton in 1817, it is a fragment of the arcades which formerly surrounded the Opera House, and it remains (though it is wondered, for how long?) a unique surviving example of Regency London. The Georgian Group has been closely interested in the Arcade, and Mr. Angus Acworth, the Secretary, gives an assurance that the Group would doubtless give its support to any suggestion that may be made towards preserving it.

The decision of the New Zealand Government will also mean the disappearance of the interesting planning and interior design work carried out at the Carlton Hotel in 1897 by Messrs. Mewès and Davis, it being one of the earliest examples of their work in London.

It was the success at the Carlton that led to the building of the Ritz Hotel in Piccadilly to the designs of the same architects.

No architect, we understand, has yet been appointed for the new work by the New Zealand Government.



The Palm Court at the Carlton Hotel. Mewès and Davis, architects.
(See this page.)

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Apprenticeship in Building Industry.

TO THE EDITOR OF *The Builder*.

SIR,—In your issue of January 28, page 135, one finds a statement that the number of apprentices entering the trade in London in the past year was 1,000, whilst it is estimated that 5,000 could be absorbed. On the following page is a statement by Mr. Coppock, General Secretary of the National Federation of Building Trades Operatives, in which he states:—

"The Employers' case can thus fairly be summarised by the main point that the apprenticeship scheme is, by virtue of the rates, proving too expensive for success and that employers are discouraged from accepting lads for training."

From these two statements it would appear that the present scheme is not popular either with employers or with boys seeking a career. In the case of the employers, this would appear to be short sighted. My own firm have always taken apprentices, and we are now fortunate in being able to employ men who started their career in the trade with us, in some instances 40 years or more ago. In the case of the boys, their reluctance is not surprising when the rates paid to apprentices are compared with the rates paid in other trades, and those paid to boy labourers, especially when they see that, under the existing conditions, a boy of 18 has to be paid the full labourer's wage. It means that if a boy is apprenticed at 15 years, over a period of five years he draws approximately £100 less than he would as a boy labourer. For this, he secures the doubtful privilege of entering a trade where, under conditions which have previously been regarded as normal, he can expect to be unemployed for three or four months a year.

If boys are to be encouraged to take up apprenticeships in the trade, two things must be done. First, the pay of boy labourers and apprentices should be reviewed, and made to compare more favourably with the wages paid to boys in other trades; and the boy labourer's wage revised, so that he does not reach the full labourer's wage until he is at least 20. Second, the problem of unemployment in the trade should be investigated. This latter is a very big problem, and to avoid unemployment some fundamental changes may be necessary in the organisation of the trade. But in the end it is better to face problems than to shirk them.

F. A. L. COLLIS.

Collis and Co., Ltd.,
93-95, Cadogan-lane, S.W.1.

Plastering Methods in America.

TO THE EDITOR OF *The Builder*.

SIR,—I have been a master plasterer for nearly 21 years and the firm which bears my name celebrates its 21st anniversary this year. I was brought up to believe that plastering is one of the few trades which cannot be mechanised or reduced to a manufacturing process—in fact, "plastering is solely the skill of the hand." However, hearing of unusual methods and materials being used in America I began to wonder if there could be anything better than that offered by British materials and British craftsmen. Finally, I applied to the Treasury for the necessary currency, stating exactly the purpose of my proposed visit, and eventually I left England on November 12 last year. I travelled 14,000 miles, interviewed 63 people and visited 12 contracts, all in 18 days.

The sole purpose of my journey was to learn how the plastering contracts were carried out in the U.S.A. Generally, I found the following:—

(1) All angles, reveals, cills, skirtings, etc., were made of a special metal and fixed before plastering commenced.

(2) Lime and cement for a backing or floating coat (internal work) had long been dispensed with.

(3) The use of sand for plastering was years out of date and only lightweight aggregates were used (weight, 300 lb. per cu. yd. against 2,600 lb. sand—approximate figures only).

(4) I also observed that the "darbies" or straightening rules were made of light-weight metal and "teethed" on one side to provide the "scratch" or "key" when required (obviating the use of the wood float with protruding nails).

Despite the blows to my own knowledge and pride I had to admit that the methods I saw used were, in many ways, superior to my own traditional methods.

My friends whom I contacted were as keen to give me the answers as I was to find the questions. I bombarded one friend until one o'clock in the morning, returned to my hotel, went through all his answers and methods, found many doubtful points and made out a list of 43 questions. I telephoned him at 11 a.m. and mentioned my queries and that same day we continued discussion until night. This was typical of the assistance and help I received from all the people I met.

To sum up—I consider that their methods, generally, are correct, and that if used in Great Britain would solve the plastering "bottle-neck," improve quality of work, and considerably lighten the work of the plasterer.

Furthermore, the insulation, acoustic, crack-resisting and fire-resisting advantages afforded by the new methods would mean much better living conditions, whether in house, factory or office. I realise that these methods may not be new to some, and I know one method was tried before the war, but I am bold enough to prophesy that within 20 years the present-day methods of plastering in this country will be completely out-dated.

First-class craftsmanship is one of the best and finest forms of expression remaining in this world, but I am of the opinion that the coming years demand a carefully blended admixture of craftsmanship and machine.

M. J. GRANT.

Manor House,
Gunnersbury-drive, W.5.

OBITUARY

Ashley F. Benjamin, F.R.I.B.A.

It is with regret that we record the death after a long illness, of Mr. Ashley F. Benjamin, F.R.I.B.A. He was elected an Associate of the Royal Institute in 1906 and a Fellow in 1930.

Regent's Park Festival Buildings.

THE annual festival of Shakespeare's plays in the Open Air Theatre in Regent's Park is now so much a part of the summer theatrical life of London that the Ministry of Works has agreed to allow Mr. Robert Atkins to displace his canvas dressing rooms by brick buildings. A new marquee for use when the weather is too bad for open-air performances is also to be erected to hold at least 1,000 spectators.

NEW SCOTTISH TOWN

Development Plan Outlined

AN account of the development plan and the difficulties of the site for the new town of East Kilbride was given to the Housing Centre on January 25 by MR. D. P. REAY, B.Arch., M.Sc., A.R.I.B.A., A.M.T.P.I., chief architect and planning officer to East Kilbride New Town Corporation.

Mr. Reay explained that the three chief reasons for the creation of the new town were to help to relieve the overcrowded housing conditions in Glasgow and other Clydeside towns; to redevelop from the hub outwards, as in the Greater London Plan, including the removal of a steelworks farther down the River Clyde, and to create new employment for men who would be unemployed when a coalfield in the area was worked out. There was a need to diversify the economy of the area.

East Kilbride was one of the few feasible sites for development on the south side of Glasgow. It was the only open area left within reasonable distance of the city and at a reasonable altitude. It was about ten miles from the centre of Glasgow. Originally it was intended to have a population of 60,000, but now it had been decided to cut that figure down to 40,000 to 45,000. The area was about 2,500 acres.

The overall density planned, including industrial development, was about 18 persons to the acre, compared with the 12-14 of the Reith Committee's Report. The Corporation was aiming at an average residential density of about 45 to the acre. Open space allocation was to be about 10 to 12 acres per 1,000 of population.

Turning to building problems, Mr. Reay said that the subsoil was mostly boulder clay 10 ft. deep. The site was full of rock, of a rather rotten shale. On the east side of the area was the Calder Glen, a valley 150 ft. deep, and all over the site were small hills. In the middle of the area, where the town centre was to be developed, was a pronounced mound. The site had a gradual slope from north-west to south-east.

The town was to be built up in four separate neighbourhoods, and the old village, containing about 2,500 people, was to be retained largely as a separate entity. The town centre would occupy mostly the slopes facing south in the centre of the area. There were to be three primary schools for each neighbourhood. Secondary schools would be sited in the neighbourhood and in the "interstices" between the neighbourhoods.

The Department of Scientific and Industrial Research had earmarked a site in East Kilbride for its mechanical engineering research station, and on the east side the Board of Trade intended to establish a trading estate. Sites for private industries were allocated on both the east and west sides of the area.

District heating was being considered for the town. About 100 houses were under construction in the centre and it was hoped to start two sections of the main traffic road fairly early this year. Building costs were very high and there was difficulty in getting building labour on the site, for the corporation had to compete with Glasgow, where the city council operated the direct-labour principle at very favourable rates for the employees. Nevertheless, the corporation was aiming at completing 1,000 houses by 1951, or 1952 at the latest.

IN PARLIAMENT

Festival of Britain

THE Public Works (Festival of Britain) Bill has been read a second time in the House of Commons. The Second Reading was made by Mr. H. Morrison, Lord President of the Council, and Mr. W. S. Morrison, on behalf of the opposition, welcomed the Bill. After the Lord President had given details of the traffic arrangements, works in connection with which were estimated to cost "not more than £2 million," MR. BARNES, Minister of Transport, said that alterations to Parliament-square would represent an enormous permanent improvement to traffic facilities in the area. Sympathetic consideration would be given to the building of piers to encourage river traffic.

Outer Ring of London.

MR. PIRATIN asked the Minister of Town and Country Planning whether the recommendations of the Abercrombie Report were being followed in relation to the building of houses in the outer country ring of London; and whether he would state the number of houses built in the outer country ring since the acceptance of the Report.

MR. SILKIN said the answer to the first part of the question was "Yes, sir," subject to certain modifications set out in his Memorandum on the Greater London Plan. The answer to the second part of the question was approximately 13,000.

Cubic Content of Buildings.

SIR RALPH GLYN asked the Minister of Town and Country Planning whether, in view of the Central Land Board's decision that the cubic contents of buildings occupying small sites could not be aggregated for the purpose of assessing the development charge when redevelopment was contemplated with a single composite building over the amalgamated sites, he would make an Order that such aggregation would be permitted, since refusal to do so was imposing severe hardship on owners of such sites, and was impeding practical schemes of development. He also asked the Minister if he would make a regulation to the effect that where a development scheme had received his department's approval, the aggregation of the cubic content of all the buildings upon the site of such development would be permitted.

MR. SILKIN said that the answer was "No, Sir." The hon. Member no doubt had in mind the building of a block of flats on a site formerly occupied by a number of houses. The owner in such a case had a claim under Part VI of the Town and Country Planning Act, 1947, in respect of any diminution in value resulting from the Act.

Steel for Bombed Cities.

MRS. MIDDLETON asked the Minister of Town and Country Planning what quota of steel was allocated to his department for use in reconstruction areas of bombed cities during 1949; and the names of the cities to which an allocation was being made, together with the amount allocated in each case.

MR. SILKIN said that the total amount of steel allocated to the reconstruction of blitzed cities in 1949 was 5,540 tons. This took no account of any steel which might be allocated to industrial, residential, or other projects sponsored by other Departments, and in some of the blitzed towns the available building resources were almost wholly engaged on such other projects. The total steel within his control had been divided among various blitzed towns on the basis of their requirements, as notified to him by the local authorities; and in making the division he had had particular regard to the question whether projects were ready to start and labour was likely to be available.

The following were details of the allocation of steel:—Bristol, 390 tons; Coventry, 750 tons; Exeter, 450 tons; Great Yarmouth, Lowestoft and Norwich, 500 tons; Kingston-upon-Hull, 450 tons; Manchester, 200 tons; Plymouth, 750 tons; Portsmouth, 750 tons; Sheffield, 400 tons; Southampton, 270 tons; South Shields, 180 tons; Swansea, 75 tons.

Steel was being provided for the City of London under a separate arrangement.

Scottish Affairs.

MR. KEY, replying to Mr. Willis, said the effect on the labour position in Scotland of the raising of the licensing limit was being watched very carefully. There was no evidence that, over the country as a whole, it had resulted in a diversion of labour from house building. The number of outstanding vacancies for skilled and unskilled men on housing work had, in fact, decreased considerably since July last when the licensing limit was raised.

MR. GEORGE ISAACS, Minister of Labour, told Mr. Emrys Hughes that it was the policy of the Government at present not to take any special steps to increase the size of the building labour force as a whole in Scotland.

MR. ROBERTSON, answering a question by Mr. Willis, said that except for types which made heavy demands on steel and other scarce materials, the Secretary of State was prepared to consider any proposals for non-traditional houses which local authorities authorised to proceed with new houses might put before him, provided that they were competitive in price.

MRS. JEAN MANN asked the Secretary of State for Scotland how far he could encourage the permanent non-traditional type of house to meet local authority needs in Scotland; and if he was satisfied that the Scottish house of this type was superior to those imported and cheaper in price.

MR. WOODBURN said that, except for types which made heavy demands on steel and other scarce materials, consideration was given to proposals for all types of approved non-traditional houses provided that they were competitive in price.

Cement Works in Hope Valley.

MR. MOLSON raised the question of mineral development in the Peak District, including cement works in the Hope Valley. He said that two recent decisions seemed to show that the Minister of Town and Country Planning was no true defender of the amenities of what were intended to be national parks. There was widespread distress at the decision to extend existing cement works in the Hope Valley. Great harm had already been done to the amenities of the Hope Valley by his decision, given against the opposition of the local authority.

MR. F. MARSHALL said that the cement works in the Hope Valley were a model of what should be avoided in country planning.

MR. KEELING said that the damage would be very great and the national park would be ruined. With reference to the scheme of Mr. Jellicoe, a distinguished landscape architect employed by the company, he asked for an assurance that some responsible body, such as the local branch of the Council for the Preservation of Rural England, would be consulted.

MR. SILKIN, Minister of Town and Country Planning, said that Mr. Molson was guilty of suppression of facts. He had not told the house that planning control over mineral workings had not been given to the Minister until February 1, 1946, nor that the Hope Cement Works had been operating for 20 years.

In the case of the Hope Cement Works, every opportunity was given to objectors to state their case. He was faced with the fact that it was necessary that we should increase our output of cement by some two million tons a year; that in the immediate vicinity of the existing works was to be found some of the best limestone in the country; that this particular undertaking had already spent some £2 million to £3 million on plant, machinery and equipment, and that there would be less damage caused by permitting them to extend than by any alternative of creating fresh works, possibly in some other part of the Peak District. It was possible for him, as a condition of the consent, to require the undertaking to restore and make available to the public some 40 acres of derelict land.

Housing Bye-laws.

MR. ERROLL asked the Minister of Health whether, in view of his recent announcement that too many houses were being built that were too high for their width, he would investigate to what extent the bye-law insisting on a minimum headroom of eight feet, even in small cottages, was still effective throughout the country; and whether, in view of the savings which would result if the minimum could, in all suitable cases, be reduced to seven feet, both as regarded costs of building and fuel consumption and in other respects, he would arrange for an early review of this and other bye-laws which no longer served any useful purpose.

MR. BEVAN said that most authorities in England and Wales had made a bye-law requiring a minimum height of eight feet for rooms in dwelling houses. He was, however, always ready to consider either an amending bye-law or an application for consent to relax the bye-law in any particular case.

Nash Terrace Houses, Regent's Park.

MR. HAYDN DAVIES asked the Minister of Agriculture how many of the Nash Terrace Houses in Regent's Park were scheduled for reconditioning; and how many had been completed to date.

MR. T. WILLIAMS said that about 430 houses on the Crown Estate at Regent's Park were being reconditioned. Of these about 250 had been completed. The reconditioned houses had been allocated to Government Departments.

MR. T. WILLIAMS, replying to Mr. Haydn Davies, said that none of the houses which had been reconditioned by the Ministry of Works had been let as a private residence. Since the date of the Gorell Report about 20 houses had been let, and 26 houses now in the hands of the Commissioners of Crown Lands were being reconditioned for letting, for residential purposes.

New Commons Chamber.

SIR THOMAS MOORE asked the Minister of Works whether he would now give a definite forecast of the date when the new Commons Chamber would be ready for occupation.

MR. KEY said that the work was progressing according to programme, and there was every hope that the Chamber would be ready for occupation after the Summer Recess of 1950.

DOMESTIC FUEL

Modern Design in Relation to Heating Appliances

MR. J. NELSON MEREDITH, F.R.I.B.A., city architect of Bristol, speaking at the Domestic Fuel Appliances Conference at the Grand Hotel, Bristol, on February 3, discussed the architect's responsibility in improving the health of the community; establishing smokeless zones; reducing the work of the housewife; assisting economy in the use of fuel and in getting the maximum efficiency from it; and securing in the home a reliable hot water service, reasonable warmth, and efficient cooking facilities consistent with economy. Following is a summary of his remarks on "The Design of Modern Buildings in Relation to Improved Domestic Heating Appliances":

Before making some suggestions on how we might achieve these objectives, may I draw your attention to some important facts? The open coal fire has been the greatest evil in smoke production, some one-and-a-quarter million tons of smoke being produced each year from domestic and other small users. Each year three million tons of solid matter are thrown into the air, together with about five million tons of sulphur dioxide, which is equivalent to about eight million tons of sulphuric acid. Some 30 years ago it was calculated that six million tons of fuel were wasted in this country on the production of useless smoke. Over every square mile of our industrial towns anything from 200-500 tons of smoke dirt falls each year and it costs about two million pounds a year to make good the damage to buildings caused by atmospheric impurities.

The open coal fire has an average working efficiency of probably less than 20 per cent., whereas it has been proved in the United States of America and in certain European countries where houses are fitted with some form of central heating, a working efficiency of 40 to 50 per cent. is secured. The householder in these latter countries has, in the main, to burn less than half the amount of coal needed by a British householder to secure an equivalent amount of useful heat in the home.

When we realise that the consumption of coal in Britain is in the neighbourhood of 60 million tons for the purpose of heating our homes it is deplorable that only a small proportion of the houses have a proper hot water supply to sink and bath. It is estimated that the amount of hot water used is, on the average, less than half of the minimum amount necessary for comfort, health and cleanliness. In spite of this, the average weekly expenditure of households of industrial workers, with incomes less than £250 a year, in 1937-38 was rent and rates 10s. 10d., and fuel 6s. 5d.

Coal is possibly our richest product and we gain to no small extent by its export. It is therefore clear that we should not waste the vital national resource on which our standard of living so largely depends. In short, we are using excessive quantities of coal, we are providing inadequate heating in the homes, and we are pouring out masses of soot and tar into the atmosphere.

What are we going to do about it? In the designing of our homes we must do all in our power to ensure good standards of heating; that is, the warming of the home, hot water for the sink, bath and basin, and cooking facilities consistent with economy and efficiency. Whether it be in the home or in industry, fuel efficiency is all important. We must aim at getting more heat from less coal. The working efficiency of a fireplace is the percentage of useful heat it gives the householder out of the fuel it consumes. For example, in the open coal fire the working efficiency is about 20 per cent., 80 per cent. of the heat in the coal going to waste, whereas in an electric fire the working efficiency is 100 per cent.

Then there is another question. How can smoke be prevented? Either by burning raw coal only under such control and in such suitable appliances that by ensuring perfect combustion no smoke is formed, or by first treating the coal to give fuels that are smokeless under all conditions and utilise the smoke-producing constituents as materials for productive purposes.

In order to ensure as great a fuel efficiency as possible we must not overlook insulation. Therefore, in planning our homes, the importance of conserving the heat produced is manifest. Walls, ceilings and roofs must be given special consideration, and I recommend "solid" ground floors. Ceiling and wall finishes should be of materials which retain the heat and have low heat transmittance, and roofs should always be felted. The designing of doorways and windows is important in order to reduce draughts to a minimum, and cisterns and pipes should be properly lagged to minimise heat losses.

The use of modern appliances, although the initial costs are greater, is recommended, and I have had good results from various back boiler types supplying hot water and with which heat that was previously lost is harnessed and used to warm clean air, which is emitted into the room or conveyed to an adjoining room and the bedrooms by means of ducts.

In my view, in the great majority of homes, cooking will be done by means of gas and electric cookers. In passing, however, I would advocate further research into the design of cookers, because I feel the position of the oven in most of them involves stooping, which the housewife would be glad to avoid. There are, of course, many types of solid fuel cooking appliances of modern design, with and without hot water boilers, which are capable of burning smokeless fuels. Excellent results are reported from users of these.

In the heating of the home and the supply of hot water, the most economical and efficient means is by district heating and hot water supply, more especially when certain public buildings, schools, etc., can be incorporated into the general scheme. I feel, however, it would be wise to include a gas or electric fire in the living-room, or a modern fireplace to burn smokeless fuel. Furthermore, I am told on good authority that for a weekly cost of about 6s. 6d. a reasonable heating and hot water supply can be secured in the home, and, incidentally, where a refuse destructor and incinerator can be incorporated in the scheme, together with possible factory premises and other larger buildings, the above cost could be reduced.

For housing layouts we are now, I am glad to say, planning and building neighbourhood units, and these are ideal for district heating and hot water supply schemes. For these I feel the bath building would provide the source for the high-pressure hot water. I do not profess to be in a position to stipulate the method which should be employed to produce the hot water. Nevertheless, in a layout such as I have outlined above I would favour electric thermal storage. It is possible that for smaller schemes boilers fed with solid fuel by automatic stokers would prove more economical. However, I add the proviso that these installations should be efficient and capable of operation with the minimum of smoke.

I am told we have acquired the reputation of having the coldest houses in the civilised world in spite of the large amount of coal we burn. Nevertheless, we must take heart and be encouraged by the fact that a British city, Manchester, was the first city in Europe to embark on district heating.

Finally, I am proud to belong to that body of people who are, and will be, responsible for the designing of our modern buildings and who are probably in a better position than any other body for helping to bring to fruition the objectives I have ventured to put forward.

MODULAR CO-ORDINATION IN U.S.A.

The Four-Inch Modulus

AMERICAN architects, manufacturers of building materials and the Government of the United States are co-operating to introduce four inches as the basic dimension in a full range of manufactured building materials. This scheme of "modular co-ordination" as it is called in the U.S.A. is being developed primarily by the American Standards Association Committee A62, which was organised in 1939 under the sponsorship of the American Institute of Architects and the Producers' Council. The Housing and Home Finance Agency has joined with these organisations in extending the use of the new system.

The theory is that if the controlling dimensions of all basic building units could be established at sizes of four-inch increments, then all construction could be composed of multiples of four inches. The 4-inch dimension or multiple includes the actual building material, plus one joint.

In recent months materials which adhere to the principle have been coming on the market in increasing quantity.

Most marked progress in the use of the method has been in the manufacture of windows, doors, kitchen cabinets, bricks and other masonry products. At one time there were 30,000 types and sizes of metal windows—this number has been reduced to 300.

The American Institute of Architects and the Producers' Council, through a joint committee, have adopted the following programme: (1) Architects familiar with "modular co-ordination" are to discuss the latest developments before meetings of architects, producers and other building groups; (2) Architectural offices and producers of building materials who accept and apply the principles of "modular 'co-ordination" will receive recognition for their work; (3) Schools of architecture are being urged to include in their training a study of the system, particularly in design and drafting work; (4) The possibility of holding clinics for training draughtsmen in using the technique is being studied.

Industrial Design Council.

The Council of Industrial Design states that there is evidence that a greater interest in industrial design was taken by all classes in the community during the year ended March 31, 1948, the year reviewed in the Council's annual report recently published. The report may be obtained from Tilbury House, Petty France, S.W.1, at 6d.

CONCRETE ROADS

Modern Design and Construction

PRESENT-DAY tendencies in the design and construction of concrete roads were outlined by MR. W. P. ANDREWS, M.C., B.E., A.M.I.C.E., M.Inst.H.E., in a paper on "Concrete Roads and Modern Tendencies," read at a meeting of the Institution of Highway Engineers' Northern Branch, in conjunction with the Lancashire County Engineering Society, at the County Offices, Preston, on February 11. Following is a summary of his remarks:—

The 1938 International Road Congress reported the increased use of concrete for roads in all countries, and gave as the main reason for this the low maintenance costs which had been experienced everywhere. Since 1938 there have been no opportunities for a wide interchange of views among the nations, and we learn what other countries are doing only by a study of their technical Press and an occasional exchange of visits. Before the war, while all countries were constructing concrete roads, the most noteworthy work was done in the United States, Germany and Great Britain. The Germans developed their own technique, which was based largely on American and British practices. In the use of a dry mix they differed from American practice but they produced vibrating plant which was largely a copy of plant used in other countries, notably Belgium. It is interesting to note that a report made on the German motorways in 1946 commented on how well they had stood up to the traffic and though they had quite a number of faults, they had served their purpose excellently. Ninety-two per cent. of these motorways were in concrete.

Mr. Andrews continued:

In America, concrete road construction is going ahead on a large scale and is limited only by the availability of technical staff, labour and materials. Similarly, France has been busy, and the new motorway west of Paris, through St. Cloud, indicates the shape of things to come. One of the most impressive sights to a road engineer visiting the United States is the traffic on the roads. In places as far apart as New Jersey and South California he may see an almost continuous stream of trucks and trailers, each weighing 10 tons, travelling at 60 miles per hour. Such traffic quickly discovers any weakness in the road structure; in fact, in such localities there is concentrated into a year or two the aggregate of perhaps 10 years of our own traffic, and outstanding among the lessons learned as a result is the need of a careful study of the sub-grade and the imperative necessity of developing and maintaining its maximum bearing capacity.

Granular soils, which are self-draining to a varying degree, provide the most satisfactory base on which to build, but steps should be taken to maintain the water table at a constant level. The danger of frost heave in a saturated soil must never be forgotten.

Cohesive soils require careful treatment. The soil should be compacted to its maximum density at the optimum moisture content, and steps must be taken to keep the moisture content constant and the water table well below formation level. A sub-base must be provided over such soils before the concrete is laid.

With really bad fibrous organic soils, such as peat, no form of stabilisation is possible, and one has the choice of removing the peat by excavation or explosives and replacing it with sound material, or constructing the road on the peat, but so designing the slabs that they will virtually float on top of the peat.

A rocky sub-grade can be excellent provided that it is uniform in bearing capacity. To ensure this it is usual to have a granular sub-base between the concrete and the rock. A chalk sub-grade may be satisfactory, but damage through frost heave may occur unless guarded against by the inclusion of a sub-base of substantial thickness.

The function of a sub-base under the concrete road slab is to ensure a foundation of uniform bearing capacity, to act as an insulating medium protecting the formation from frost action and to form a drainage medium under the slab. The sub-base is usually 2 in. to 6 in. in thickness, depending on the nature of the soil underneath. It is generally composed of granular material such as well-burned clinker, sand or gravel, but latterly a lean mix concrete or a soil cement stabilised mixture has been used. The great advantage of either of these types is that in themselves they form a road over which concrete can be transported without their suffering any damage. It is usual to give such sub-bases a dressing of tar or bitumen to reduce to a minimum the friction with the underside of the slab.

It is possible to calculate the approximate stresses in the slab due to wheel loads, due to temperature changes throughout the slab thickness and due to overall temperature movements and from these to design a slab of required thickness. There remain other factors which tend to neutralise these calculations. Unknown quantities are the moisture gradient, the movements in the slab, the effects of impact and fatigue and the extent of soil consolidation under traffic over a long period. On the whole, therefore, we are mainly dependent on the results of long-term experiments and research and still more on practical experience of both failures and successes in the design of a road. The width of the road slab is largely a matter of economical construction. It must be remembered that the greater the width the greater will be the tendency for longitudinal cracks to develop along the centre of the slab, and in slabs of 20 ft. or greater width it is advisable to have a longitudinal dummy joint.

The value of reinforcement in concrete road slabs has always been a vexed question. It has been accepted that it functions only after a slab has cracked, and then it holds together the fractured faces of the slab, aiding in load transmission and preventing the crack opening and the infiltration into it of incompressible material. In theory this idea is sound, but experience of the behaviour of concrete roads, reinforced and unreinforced, does not always substantiate it.

A New Reinforcement Theory.

In the United States a new theory is being put to the test. It is fathered by a Mr. Woolley, of the Public Roads Administration (a Federal authority equivalent to our Ministry of Transport), and it involves the use of a much greater weight of reinforcement. Mr. Woolley argues that sufficient steel should be incorporated to ensure that the tensile strength of the steel is greater than that of the concrete; in other words between 0.5 and 1 per cent. For an 8-in. thick road there would be about 18 lb. of steel per super yard. In such a road the concrete, in setting, will contract, and as this tendency will be resisted by the steel, cracks will develop at intervals of 3 to 5 ft. Such cracks will be very fine; in hot weather they will be practically invisible, and even in cold weather the presence of the reinforcement will prevent them from opening to permit the entry of extraneous matter. Some roads were constructed in the United States to this design in 1946-47 but it is too early yet to form a definite opinion on their quality. They contain no joints and therefore all the troubles attendant to joints, mud pumping, differences of level and faulting are eliminated.

Some 25 years ago, concrete roads were constructed without joints. Cracking and a few blow-ups occurred, and expansion joints were introduced at regular intervals varying from 25 to 50 ft. to permit the slabs to expand and contract with changes of temperature. The weakest part of the road and the most difficult to construct is in the neighbourhood of the joints, and if they could be safely eliminated, as suggested by Mr. Woolley, great benefit would accrue.

The Use of Dummy Joints.

At the present time American theory, and the most popularly accepted American practice, is to eliminate expansion joints, or have them at intervals of not less than 800 ft., but to have intermediate dummy joints at intervals of 15 to 20 ft.

United States engineers claim that even if there is a serious rise in temperature after the roads have been constructed no detrimental effects will ensue. They say that the road will be in compression but that the compressive stresses will not be sufficient to cause damage, and that they will be, if anything, beneficial because they will eliminate cracking, which is caused by tensile stresses.

In this country there is a tendency to follow this example and when the work is constructed during the warm season of the year expansion joints should be spaced at intervals of 800 ft. Dummy joints must be included to anticipate any cracking that will occur and to relieve warping stresses. Where provision is not made for expansion there will be the danger of blow-ups occurring during the warm weather. The Americans are prepared to accept this risk, arguing that the cost of repair is much less than that of making joints. In England very few cases of blow-ups have been recorded during the past 30 years, and it is open to question if, at least, some of them have not been due to the expansion joints having become filled with non-compressible material and so having ceased to function.

The use of load transfer devices at all the joints is now universal practice on all heavily trafficked roads, even where the sub-grade has been compacted to its maximum density. Such devices are intended to prevent differential settlement of adjoining slabs. They are usually in the form of round dowel bars of a minimum diameter of $\frac{1}{4}$ in. and a minimum length of 18 in. They are usually spaced at 12-in. to 18-in. centres. At expansion joints they must be free to move in one slab so as not to impede the functioning of the joint.

It is of great importance that the dowel bars are placed and held in the correct position, parallel to the centre line and surface of the road and to one another. Any misalignment in any one may result in more harm than good in their use.

A few words on the maintenance of concrete roads may not be out of place. A well-made concrete road can give any-

thing from 20 to 50 years' satisfactory service provided a little attention is given to maintenance. Reference has already been made to the necessity for keeping the joints sealed to prevent the ingress of water to the sub-base. The joints, and any cracks that may have developed, should be examined in the autumn and resealed if necessary. If signs of mud pumping appear, remedial measures should be taken at once to prevent serious trouble developing.

Normal maintenance costs very little, generally less than a penny per super yard per annum, but neglect of it may result in heavy expenditure and a shortened life for the road. A major and occasional item of maintenance is the raising of slabs which have sunk below their original level or with reference to adjoining slabs. The process, known as pressure grouting, requires special plant and great skill and care in operating it. The trouble may be due to the normal subsidence, as, for example, of an embankment at bridge approaches, or to deterioration of the subsoil as a result of water getting into it.

The repair work is effected by drilling holes of 1¼ in. or 2 in. diameter at selected points in the slab and forcing grout through these holes into the subgrade until the slab rises. Before doing this any water collected under the slab must first be removed. The holes are generally drilled about 30 in. from joints and from the sides of the slab, but in difficult cases more holes, nearer to these edges, may be required. The raising of the slab must be carefully watched lest it be overdone, and a careful watch is also required to ensure that adjoining slabs are not also raised. Care must be taken also to prevent the grout penetrating into drains, ducts, manholes, etc.

Where mud pumping has occurred but the slab has not sunk, the same process is applied to fill the voids underneath the slab, work being stopped as soon as the slab shows the first tendency to lift.

Conclusions.

The foregoing remarks indicate present-day tendencies in the design and construction of concrete roads. In this country we have not had the opportunities yet of putting our ideas into practice on a large scale, but we can study the ideas of other countries and benefit from them. We may not be able to emulate the scale of the work being done abroad, but in the quality of construction we should be second to none if we apply the results of experience and research.

BOOK REVIEWS

CIVIL ENGINEERING FOR THE CLERK OF THE WORKS. By Vernon C. Whiting and K. Mills. (London: Longmans, Green and Co.) Price 12s. 6d.

This book, which is directed more to the student than to the trained engineer, contains an excellently clear enunciation of the basic principles of civil engineering as applied, chiefly, to those aspiring to the position of Clerk of the Works, involving building and surveying operations.

The descriptive matter is expressed simply and is easy to understand, and the reader is first introduced to a consideration of working drawings and commonly used conventional signs found thereon.

After dealing with conditions of contract, including bills of quantities, the author explains adequately, yet concisely, the setting out of works, and the elements of surveying, together with a clear description and illustration of the main implements employed.

In addition there is important information concerning materials to be employed on various kinds of jobs, the keeping of records and types of plant in common use.

This book can be recommended for its clarity of description and for the manner in which a difficult subject is presented to the reader in readily understandable and really interesting form.

HEATING AND VENTILATING'S ENGINEERING DATABOOK. By Strock. The Industrial Press, New York. Price £2 5s.

A book of generous proportions containing a large fund of knowledge on a subject which, of itself, covers a wide field. The title aptly describes the work as it is, in fact, a compilation of data, all of which are of a highly important and useful character to heating and ventilating engineers.

The subject is treated in a logical sequence, commencing with heat and moisture in air, embellished with comprehensive thermal and psychometric tables and charts.

A section on fuels and combustion is very informative in its discussion of both solid and liquid fuels. In connection with the latter useful data are given concerning the volumes of tanks and methods of determining the contents of partially-filled tanks of a variety of forms.

Chimney sizing and piping, pipe friction, pipe capacities and fittings are given the prominence they deserve, as is also the subject of water hardness and corrosion.

It is impossible in the short space of a review to set out and refer to all the many subjects offered to the reader, but it may fairly be said that there is scarcely any kind of information required by the engineer which cannot be ascertained from this work.

The book ends, appropriately enough, with some mathematical data, details of drafting room practice and a glossary of terms commonly encountered in this industry.

It should be noted that copies of this book may be obtained from "Machinery," National House, West-street, Brighton, 1.

R. S. D.

CLERK OF WORKS' MANUAL. By. G. W. Harris. (London: Crosby Lockwood and Son, Ltd.) 7s. 6d. net.

This most useful book explains to the young building technician the nature of the work which the Clerk of Works has to carry out and the knowledge he requires in order to fulfil his duties. The author assumes that the reader has a knowledge of the building trade and uses terms that are well known in the industry. In summarising his advice to the would-be Clerk of Works he writes: "Do all you can to enhance the reputation of the architect by safeguarding the standard of work, foreseeing the inevitable troubles before they occur, and producing harmonious working on the job and your own reputation will be enhanced likewise."

BOOKS RECEIVED

BUILDING FOR THE PEOPLE. By Richard Sheppard. (London: George Allen and Unwin, Ltd.) Price 18s.

WOOD ADHESIVES. By Edward H. Pink. (London: E. and F. N. Spon, Ltd.) Price 12s. 6d.

DRAINAGE OF LAND, ESTATES AND BUILDINGS. By Stanley Gale. (London: Chapman and Hall.) Price 22s.

THE GLAZER'S BOOK.—By A. B. Searle. (London: The Technical Press, Ltd.) Price 6s. (This was wrongly referred to in our issue of February 11 as The Glaziers Book.)

MAINTENANCE OF ROADS

Need for Mechanisation

THE papers discussed at the meeting of the Road Engineering Division of the Institution of Civil Engineers on February 8, included one by MR. R. M. FINCH, O.B.E., M.I.C.E., dealing with "The Maintenance of Roads in Cities," and a second by MR. R. R. W. GRIGSON, B.Sc., A.M.I.C.E., dealing with "The Maintenance of Roads in a County Area."

MR. FINCH pointed out that at the present time economy in money and manpower was the prime consideration but, by a determined effort, it might be possible not only to achieve results in this direction but also to obtain the necessary incentives to try out the latest mechanical aids.

After describing conditions in Nottingham he dealt with the resurfacing programme for that city. He showed how it behoved engineers to make the best use of the ample time available when the highway was not occupied by traffic, for major maintenance or resurfacing operations. Possibly a deterrent in the past had been the high cost of overtime rates, but labour having been reduced to negligible proportion the speed of progress easily outweighed such considerations. Drawing up a careful programme of work so that it could be carried out at suitable times was essential.

The necessity for keeping every vehicle on the job and for arranging for servicing and maintenance in off-work periods was pointed out. To obtain the maximum benefit from mechanisation almost up-to-the-minute information on costs was essential, as this provided a check on supervision, wastage and the time-factor against expenditure.

The methods used to deal with two post-war problems, output and absenteeism, were described, and it was shown that results had been that absenteeism was now practically non-existent, and that output was above pre-war level. Credit for this was given to the formation by all administrative, professional and other employees of the Works and Welfare Committee, to enable them to discuss grievances and departmental matters.

MR. R. R. W. GRIGSON, in his paper, described the problems to be met with in counties of various sizes, and the organisation adopted. He dealt with such subjects as types of material used in carriageway resurfacing, failures in bituminous carriageways, concrete haunching, maintenance of concrete carriageways and general maintenance of footways, kerbs, drainage systems, etc. Reference was made to different machines and to the types of work which could be carried out by them.

Various tests and research work carried out by the Road Research Laboratory relating to surface-dressing and resurfacing were described.

The speaker concluded by expressing his opinion that to improve on existing standards of maintenance, mechanisation was essential. So far only a few of the many operations involved had been successfully mechanised and there was, therefore, great scope for extending the use of machines. By this means output might be increased, labour decreased and quality improved.

Festival of Britain.

Festival of Britain 1951, 2, Savoy-court, London, W.C.2, announce that their telephone number is now Waterloo 1951.

INQUIRY BUREAU

Capillary Dampness under Cork Floor

Q.—We have recently experienced trouble from capillary dampness with a cork floor which we have laid upon a concrete sub-floor with a granolithic finish, which had been laid but unused for ten years. Upon lifting a tile it was found that an appreciable amount of water was present between tile and concrete, although before laying the floor and during operations this appeared perfectly dry.

We have no data regarding the specification of the original floor, as it was laid before the war under a different architect and a different builder from those who completed the building and under whom we carried out our work. The cork tiling was fixed to the grano. with a composition which we have found satisfactory. The floor finish is slightly above the level of the surrounding ground and the soil is gravel.

(*a*) Can a contractor laying the floor finish be reasonably blamed for deterioration of his work from this cause?

(*b*) Can one reasonably be expected to anticipate capillary dampness with a 10-year-old granolithic finish concrete floor?

J. W. B.

A.—It would be very difficult to blame anyone, for the following reasons: The base concrete and the granolithic were probably originally intended to be the finished job with no intention to lay another floor finish on the granolithic. We suggest that the materials of the concrete and the granolithic are not waterproof in themselves; consequently they could take up rising dampness from the soil below if the concrete and granolithic were not treated with a waterproofing solution when laid. It is quite possible for dampness to rise through the concrete and the granolithic and upset the adhesion of the fixing compound used; in that case it would collect under the cork tiles. Capillary dampness can go on indefinitely, particularly if the subsoil is wet. We suggest that where the likelihood of dampness is suspected it is desirable to cover the existing floors with ½-in. thick asphalt before fixing the cork tiles.

Fixing Glazed Bricks to Steel.

Q.—Can you suggest a mortar or compound with which we can fix glazed bricks in a steel sheet? This is suspended with steel stanchions and will be firm. The glazed bricks are at the bottom and on both sides as shown on the sketch enclosed [not reproduced].

A.—In the sketch provided, there does not appear any resemblance of a base to the steel sheets forming the outer lining. We suggest that to suspend the glazed bricks a base should be provided. With reference to a mortar or compound, there are quite a number of acid-resisting compounds, but these can only be recommended when one is in possession of the description and the approximate maximum concentrations of acidic solutions against which the mortar or compound will require protection. [A list of helpful proprietary compounds has been forwarded.—ED.]

Furniture Beetle and Roof Timbers.

Q.—Recently I have been architect for some alterations to some old farm buildings. After the works were completed and the timbers of the existing roof had been cleaned down, I was much surprised to find that these were "worm eaten" to a fairly considerable extent. As it will be almost impossible to replace these timbers without very considerable expense, and they are of sufficient dimensions to be still safe, I am wanting to know if there is any method of treating them so as to prevent any further depredations by these insects. The timbers appear to be red deal, although they are too old to be really certain. I have never known deal to be attacked by worms.

J. H. C.

A.—From the description given it seems likely that this is an attack by the common Furniture Beetle (*Anobium Punctatum*) and the treatment is the application of a proprietary insecticide on a fairly liberal scale. In this respect we would suggest that the application is made in March and again the following autumn if necessary. The furniture beetles belong to the Death Watch beetle family. They prefer well-seasoned timber, both hardwood and softwood. In a booklet entitled "Timber Pests, their origin, prevention and cure," published by the Timber Development Association, Ltd., 75 Cannon-street, London, E.C.4, the whole answer to this pests problem is given.

[A proprietary insecticide has also been recommended.—ED.]

Chimney Stack: Cracking.

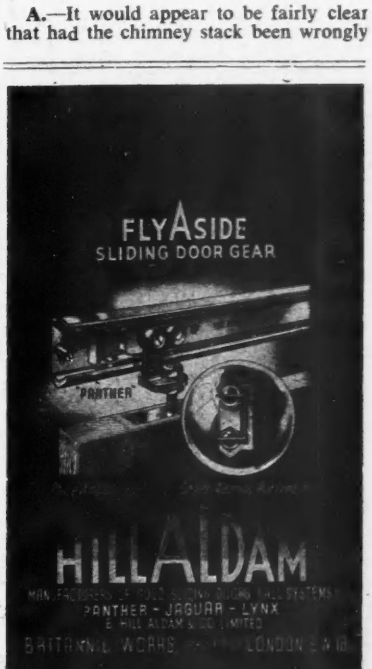
Q.—I have a small house built in 1938. It contains an "Ideal" boiler, and a short time ago I noticed from the outside that the chimney stack was cracked; this was preceded by stains on the bathroom wall caused by the boiler. The builders sent their workmen to patch it up; this has not been successful and the stains on the wall are worse than ever. I contend that had the construction of the boiler, etc., been properly carried out in the first place this fundamental trouble would not have occurred. The builders refute any responsibility in the matter.

K. S. B.

A.—It would appear to be fairly clear that had the chimney stack been wrongly constructed, it would have shown its defects soon after 1938. From experience and investigation of some chimney flues, it has been found that, adjacent to the top of the stack and near the chimney pot, a tar substance had collected in the form of a honey-comb so hard that the chimney sweep could not get his brush through, but had to erect a ladder and knock the substance away with a hammer. On reviewing the substance the conclusion was arrived at that the quality of the fuel was the cause and, moreover, the brick joints were opened by the heat. This in turn caused the pargeting to flake off. In pre-war times it was possible to use only one class of fuel and the result was more or less an even temperature, whereas the fuels supplied during the last years were often unknown so far as the calorific value was concerned. The result of the particular fuel used might cause deposits of sulphates in the flue and result in cracking the pargeting and the joints of brickwork. One must also remember that quite a lot of cracked chimneys are due to enemy action and some of the cracks take a considerable time to show.

It would appear that the remedy for the boiler flue in particular is to line with fireclay lining. This eliminates the old method of pargeting made of cow dung and lime mortar which was extremely efficient, but it must also be observed that the fireclay lining protects the brickwork which should be built with lime mortar and pointed with a cement and sand mortar. A stack built in cement and sand is less likely to contract or expand with the inconstant heat temperature.

From the legal point of view there is no redress as any period of maintenance would have expired long ago.



Condensation in an Office Building.

Q.—I have a building in which I have made my office. It is 12 ft. by 12 ft. corrugated outside, and the inside is lined with roofing felt and painted. But I find that, although I have a gas fire going all day, water trickles continually from the ceiling and walls.

Do you think lining it out with insulating boards would stop the condensation? If so, what is the best kind of board to purchase.

J. W.

A.—The humidity in this case is caused by the different external and internal temperatures. The condensation is known as water vapour, and in this case it collects on the painted surfaces and consequently causes the trouble complained of. There are several methods of dealing with the problem:

(1) Cover the present roofing felt with an aluminium-faced plywood. The metal should face the painted felt, the joints being covered with plastic moulding strips to form panels. Stain with spirit stain, not varnish, and apply this to the ceiling as well.

(2) Strip off the roofing felt, fill the spaces between the studding with slag wood or granulated cork, and then cover the entire face of ceiling and walls with a building paper and fix to the studding a hardboard with plastic moulding strip and leave undecorated. Or, preferably, cover with ¼-inch or ⅛-inch fibre-board instead of hardboard, using glass fibre wool instead of the building paper.

(3) Remove the roofing felt, cover studding to ceiling and walls with building paper, well lapped. Cover ceiling and walls with ½ inch or ¼ inch of fibre boarding, and paint the back with a bitumen asphalt paint. Cover the joints with light moulding strips, and finish with a water

paint or plaster texture material. The three methods described are for dealing with the ceiling and walls.

The flooring should be taken up, and on top of the wood joists fix heavy building paper, well lapped, or fix ½-inch insulating board and replace the floor boards.

A form of permanent ventilation is desirable, apart from an opening fanlight, either over the door or in the casement. There should be on either end of the building two 9 in. by 9 in. L.C.C. air vents external and two 9 in. by 9 in. louvre inside vents. Line the space between the cavity with plywood. The ventilators should be near the ceiling.

G. W. H.

EFFICIENCY AND TEAM SPIRIT

Mr. Longley Addresses L.M.B.A. Council

THE two chief directions in which builders must be active were described last week by the new President of the National Federation of Building Trades Employers, MR. NORMAN LONGLEY, of Crawley, Sussex, as efficiency in business methods and maximum man-hour production. He was speaking to the council of the London Master Builders' Association.

In this country, he said, we had developed our employer trades union machine to a very fine point. But in so doing, we had lost the spirit of joint endeavour to a large extent.

The National Federation could look after the official side of employers' relations with operatives, but it was up to each firm to see that it got maximum production. Far too often the employer and worker looked to the organisations when problems arose, instead of looking at the problem together. That was where team work through the firm came in.

Advantages of co-operative effort could only be attained if the job of management was done properly and costs were kept down.

Referring to the London Master Builders' Association, Mr. Longley said that apart from the council of the National Federation, the council of the L.M.B.A. was the most powerful body of employers in the industry. The L.M.B.A. had done much in recent years to weld together the large and small firms, and he congratulated them on the work done by their Maintenance Builders' committee in looking after the interests of small builders.

INDUSTRIAL RELATIONS

Value of Frank Discussions

SPEAKING last week as the guest of honour of the London Master Builders' Association, central area No. 1, MR. NIGEL HANNEN, the new president of the L.M.B.A., said that among the things that occupied members' minds at the present time was the interpretation which would be put by the Government on the Working Party's Report. The evidence prepared by the National Federation of Building Trades Employers made a good case for the builders, and he was confident that they could rely on their representatives.

The speaker also referred to industrial relations. Builders were always on the best of terms with the operatives' representatives on the many occasions when they met, he said, and much was gained by frank discussions. But in talking to their own men he did not see why they needed an intermediary, who might debar them from being on the best of terms with the operatives themselves. The smaller builders had direct contact with their men. They would not hesitate to discuss with them the problems of the job in hand, and if they had any good suggestions, to accept them. The men had suggestions to make, which, on examination, could prove to be good, and employers most certainly ought to have things to tell them which would not reach them unless they had some personal contact. There must be no misconception in the minds of employees as to what the industry stood for. It did not discourage competition, which promoted efficiency. It expected fair and equitable contracts and tendering conditions. It stood for the efficiency of personal service.

NATIONAL FEDERATION

Regional Presidents Elected

THE presidents of the Regional Federations belonging to the National Federation of Building Trades Employers elected for 1949 are as follows:—London Master Builders' Association, Mr. Nigel Hannen; Eastern Federation, Mr. Nelson J. Lawrance (Sawbridgeworth, Herts); Liverpool Federation, Mr. W. E. Tyson (Liverpool); Midland Federation, Mr. W. W. Sapcote (Birmingham); Northern Counties Federation, Mr. R. Shield (Swalwell-on-Tyne); North-Eastern Federation, Mr. W. Moss (Leigh, Lancs); South Wales Federation, Councillor E. Glyn Davies, J.P. (Aberayron); Southern Counties Federation, Mr. W. Keith Martin (Eastbourne); Yorkshire Federation, Mr. S. T. Firth, J.P. (Armthorpe).

The South-Western Region is holding its annual meeting at the end of the month, when it is expected that Mr. G. I. Orchard (Stroud) will be elected president.

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BUILDING FIRMS

Their Size and Number

COMMENTING on the registration of builders in his letter to members of the London Master Builders' Association, MR. G. H. A. HUGHES, F.R.I.C.S., the Director of the Association, states: "It will be remembered that no firm may practise as a builder unless so registered. It would seem that in the last year or so quite a number of persons or firms who were registered have dropped out of the picture."

The following table, which is included in Mr. Hughes' letter, shows the total numbers of registered firms and their sizes by operatives employed, as at February, 1948. Mr. Hughes adds that he has gathered the impression that the number of firms has probably not increased since that date, the contrary possibly being the fact.

Size of Firm by Operatives Employed.	*February*, 1948.	
	Firms.	*Ops.*
"0"	52,319	0
1-5	45,014	105,948
6-19	17,965	181,789
20-99	7,552	294,137
100-499	1,099	205,951
500 and over	127	159,227
Totals ...	124,076	947,052

Size of Firm by Operatives Employed.	*February*, 1948.	
	Firms. percentage.	*Ops. percentage*
"0"	42.2	0
1-5	36.2	11.2
6-19	14.5	19.2
20-99	6.1	31.1
100-499	0.9	21.7
500 and over	0.1	16.8
Totals ...	100.0	100.0

Borough Architect for Birkenhead.

Birkenhead Town Council has decided to appoint a Borough Architect and Director of Housing at a salary of £1,250, rising in two years to £1,450. In making this decision the contention of Conservative members was that they must have a suitably qualified official, for in addition to the housing work the Education Committee had numerous projects for new schools and a technical college, the architectural fees in connection with which would amount to £43,000. In connection with the proposed new technical and commercial college, application is to be made to the Ministry of Health for authority to borrow £653,000.

British Standards.

The British Standards Institution has recently issued a revision of the British Standard 387, relating to "The Attachment and Drive of Circular Metal Cutting Saws for Cold Working." The present edition of the Standard has been prepared to make provision for the mounting of large diameter saws above 60 in. and up to 72 in. which have come into general use since the Standard was first published. No alterations have been made to the dimensions and tolerances of those sizes of saws which were included in the previous edition. Copies may be obtained from the B.S.I., 24, Victoria-street, S.W.1. price 2s., post free. Reference, B.S. No. 387, 1948.

The following British Standard Specification has been issued from 24-28, Victoria-street, S.W.1.

"Nomenclature of Decorative Metallic Finishes" (B.S. 1448: 1948) (price 2s. 6d. post free.)

NEWS IN BRIEF

Abolition of Street Fire Alarms.

If the L.C.C. approves a recommendation of its Fire Brigade Committee, London's street fire alarm system will be gradually abolished and replaced by the "999" emergency telephone call.

Enlistment in Heavy Industries.

Statistics provided by the Birmingham Juvenile Employment Bureau, the Employment Exchange, and local employers, show that the trend of enlistment to-day veers away from the heavy industries such as building and ironwork.

Structural Clay Tile Partitions.

Complete data on the performance of 20 structural clay tile partitions subjected to fire-endurance and hose-stream tests at the National Bureau of Standards, U.S. Department of Commerce, are contained in a new booklet, "Fire Resistance of Structural Clay Tile Partitions," now available from the U.S. Government Printing Office, Washington 25, D.C., U.S.A., price 20 cents.

Housing in Eire.

In future no building licences will be required by local authorities or by persons building subsidy houses in Eire. An improvement in supply of materials has made decontrol possible, although there is still a shortage of roofing materials and piping. In the year ended June 30, 1948, the value of local authority and private enterprise building authorised by licence was £10,142,400, or 56.9 per cent. of the total value of all the building work authorised by building licences.

Report on Atmospheric Pollution.

The standard of operation of works controlled under the Alkali, etc., Works Regulation Act, 1906, was generally higher in 1947 than in recent years. This is stated in the 84th Annual Report on Alkali, etc., Works by the chief inspectors of the Ministry of Health and the Department of Health for Scotland, and published by H.M. Stationery Office, price 9d. net, post free 10d. Code No. 32.1.0.47.

T. and C. P. Act Publications.

The Town and Country Planning Act, 1947, with its 120 sections, 11 schedules and supporting Regulations and Statutory Instruments, is a complex piece of legislation, even for the trained legal mind. For architects, surveyors and others professionally interested, study of the Act has provided a rather unappetising homework subject for the past three years or so. There will doubtless be no lack of textbooks on the New Town Planning law, and they will appear in due course, but "100 Questions and Answers on the Town and Country Planning Act," by Derek Walker-Smith, is a useful and informative forerunner. Questions and answers are set out clearly in adjoining columns, while two further columns give the appropriate reference in the Act and general remarks respectively. A comprehensive page index, compiled by Mr. Geoffrey Rippon, barrister-at-law, is included. The price is 9s. 6d., by post 4d. extra. Also recently published is "Ready-Reference Summary of the Rules for Calculation of Development Value and Third Schedule Tolerances," under the Act. This has been compiled by Mr. Edwin Robinson, B.Sc., Dip.T.P., F.R.I.C.S., F.A.I., and the price is 2s. 6d., plus 3d. postage. Both publications are published by The Estates Gazette, Ltd., 47, Museum-street, London, W.C.1.

Civil Engineering Division.

Messrs. Gough Cooper and Co., Ltd., have established a Civil Engineering Division at Windsor House, 46, Victoria-street, S.W.1, under the management of J. H. W. Turner, B.Sc.(Econ.), B.Sc., A.M.I.C.E.

New Pithead Baths Installations.

The National Miners' Welfare Joint Council announce that during the month of December, building was commenced on new pithead baths installations at the following collieries:—Bickershaw (Lancashire) for 2,880 men, £126,500, by A. M. Coll and Son, St. Helens; Snydale (West Yorks) for 576 men, £46,513, by Harlow and Milner Ltd., Wakefield; Upton (West Yorks) for 2,880 men, £121,121, by W. G. Birch (Harrogate), Ltd., Harrogate; Wharncliffe Woodmoor, for 1,920 men, £108,266, Nos. 1, 2 and 3 (South Yorks), by W. Johnson and Sons Ltd., Wombwell.

War Department Schedule.

In regard to the delay in obtaining for general use the War Department Schedule of Prices, reviewed in *The Builder* for January 7, Col. C. Kirk, of the Directorate of Fortifications and Works, War Office, writes: "The position regarding the new Schedule is that it has not yet been distributed for use by the War Department personnel, and until this distribution is made, it is considered to be undesirable for it to be made available to the general public. It is hoped to make the new Schedule available to the public before April, 1949." The price will be 25s.

EMPHASIS ON TECHNICAL BOOKS

W. H. SMITH & SON give special attention to the requirements of technical men and students.

Books not in stock, but obtainable from publishers, are supplied within a few days. Students' needs for examinations are given priority.

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TREES AND WOODLANDS

Ministry's Plans for Preservation

A MEMORANDUM has been issued by the Ministry of Town and Country Planning giving guidance to local planning authorities on how to use their powers for the preservation of trees and woodlands. Once a Tree Preservation Order has been made by a local planning authority and confirmed by the Minister, trees and woodlands covered by the Order may not be felled without consent, and the memorandum indicates in what circumstances Tree Preservation Orders should be made, and when consent to fell should be refused or given.

The main considerations which local planning authorities are asked to bear in mind are the effect of felling on the appearance of the countryside, the welfare of woodlands, the need for timber and for food production, and the liability to pay compensation in certain cases in which permission to fell is refused. Land owners are encouraged to seek agreement with local planning authorities on a plan of felling operations, thus facilitating the administration of Tree Preservation Orders.

An Advisory Service.

The memorandum emphasises that the interests of good forestry and the appearance of the countryside in the long run will seldom clash. Where, however, there is a danger of a short-term clash of interests, it is suggested that the solution will be found in a special plan of operations for the felling and replanting of the woodland, which may defer the felling of certain areas otherwise ripe for felling until others have grown sufficiently. Expert guidance will be needed in these and other matters, and on broad questions the advisory services of the Forestry Commission will be available.

A danger of damage to the countryside is recognised in the fact that Board of Trade licences to fell are issued out of consideration of the needs of timber and not of the appearance of the landscape, but this danger can be minimised if local planning authorities exercise their powers of making Tree Preservation Orders. In making and operating these Orders, however, local planning authorities are asked to bear in mind that no action will be agreed which would seriously interrupt the flow of supplies of timber.

The first principle underlying the payment of compensation is that, while woodlands are a commercial crop from which the owner is entitled to benefit, so that refusal of permission to fell will normally call for compensation, owners of woodlands have a duty to practise good forestry, and not to deface the countryside. Therefore, as the memorandum points out, compensation should not be paid in cases where felling would be an act of bad forestry or vandalism.

The second principle is that single trees and groups of trees usually have no commercial background, and refusal of permission to fell ought not in general to call for compensation.

The memorandum will be on sale at H.M. Stationery Office, price 6d.

Employment in Building Industries.

According to the monthly figures issued by the Ministry of Labour and National Service, the number of persons estimated to be employed in the building and civil engineering industries during December fell by 5,000 to 1,357,000. In the industries manufacturing building materials the numbers employed fell the same month by 2,000.

H*

SUPERVISING BUILDING

Kent Surveyor Discusses His Work

In his talk at the Housing Centre, 13, Suffolk-street, on February 1, Mr. Charles W. Page, C.R.S.I., M.S.I.A., surveyor and senior sanitary inspector to Hollingbourne (Kent) R.D.C., said that he found very few cases of plans of buildings submitted to the council which had to go back to the applicant for alteration.

Plans which came before the city council could be classified in three ways. Those known as C.1 plans were returned to the district council for that body to deal with as they thought fit. C.2 plans were those in respect of which the county planning officer wanted the comments of the district council. If these comments agreed with those of the county planning officer, the plan went back to the district council as "C.2 agreed" plan, and the district council could take action about it. C.3 plans were those considered to affect high county planning policy.

Describing that branch of his work in which he inspected houses and buildings in the course of erection and immediately after completion, Mr. Page gave examples of problems with which he and his staff were sometimes faced. In building one house recently, he said, it was found necessary to put the foundations 18 in. below ground level. They did not know what sort of soil they would find. There might be an old trench filled in, or it might be part of a very old clay or chalk pit, and additional work might have to be done to make the house safe.

The speaker said that he had met very few cases of people erecting farm buildings or houses, or making extensions to buildings, without consulting him. The general public seemed to be much more alive to their responsibilities in this respect than they were some years ago. His council endeavoured to ensure that new buildings erected in their area did not clash with the prevailing style of architecture of the surrounding countryside and with the landscape.

About 25 per cent. of the sites he selected for housing were rejected by Government departments after being approved by the county planning committee. He gave as an example a site selected at the village of Harrietsham for the erection of some houses. The Ministry of Transport objected on the ground that the houses would be on one side of the by-pass and the school on the other, so that the children would have to cross the bye-pass when going to and from school. He thought it quite right that they should have taken that attitude, although the children in the village had been crossing the bye-pass for some years before.

The public in the Hollingbourne area were to be commended for their attitude to the building licensing regulations. He could only recall two cases in which ne had been compelled to refuse licences.

In referring to the council's housing activity (200 permanent houses have been erected since the war), Mr. Page said that a disused hospital was being converted into four flats. Their architect was considering the possibility of putting in conduits for sanitary services in connection with future housing schemes, and another feature under consideration was the one-pipe plumbing system. Before the war the rents of the council's houses were from 5s. to 7s. 6d. a week. Rents of the post-war houses went up as high as 25s., which was beyond the means of many people in the district, especially the agricultural workers.

TRADE NEWS

Freedom of Borough for Builder.

The Borough of Greenwich has presented the freedom of the Borough to Councillor W. F. Mills, J.P., the managing director of Messrs. William Mills and Sons, builders and contractors, of Woolwich-road, East Greenwich, S.E.10.

Presentations to Mark Anniversary.

Concrete, Limited (Bison Floors), 16, Northumberland-avenue, W.C.2, celebrate their thirtieth anniversary this year. Many firms' histories are much longer, but Concrete Ltd. started with one small works in Leeds. They now have five large works in England and Scotland, with licensees in most countries overseas. To mark the occasion certificates and gold watches are being presented to 30 employees with 25 years' service and over; portraits are being presented to Mr. J. G. Ambrose and Mr. C. B. Mathews, the founder managing directors, and a special birthday number of "The Bison Trail," the firm's house journal, is being distributed to all employees.

Stud Welding in Building.

To supersede conventional methods of fixing members of iron and steel structures, partitions, sound and heat insulations, electric wiring, fittings, pipes and so forth, a new technique of stud welding electrically is now available. Stud welding provides for welding on to ferrous surfaces standard screwed studs and a variety of special types of pins, hooks, saddles, etc., for such jobs as fixing corrugated roofing; securing plastic materials, wooden flooring and asbestos-cement board over steel sheet; and hanging pipes. The principle of this method is to strike an arc between the end of the stud and the base metal, to produce a molten pool and raise the end of the stud to melting point, extinguish the arc and drive the stud into the pool to form a weld. This operation is performed with a "gun" which is claimed to be so simple to adjust and manipulate that studs can be welded at the rate of dozens per hour. Stud welding has been employed in the building industry for several years, one firm specialising in the process being the Nelson Stud Welding Service. To provide for further development and expansion of the service it will now be operated by Crompton Parkinson, Ltd., Crompton House, Aldwych, W.C.2.

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CODES OF PRACTICE

Domestic Space Heating (Electric)

The Codes of Practice Committee has now issued in final form Code 324.201, "Installation of domestic electric space heating equipment." The Code was previously issued as a draft for comment and has been revised by a drafting committee convened by the Institution of Electrical Engineers.

It deals with the selection and location of independent electrical space heating appliances for individual rooms of dwellings and similar premises, whether they are to provide all the heating required for a particular room or to supplement the space heating provided by other means. It does not apply to central heating systems.

Reference is made to the general considerations set out in the Code of Functional Requirements, Chapter VIII, "Heating and thermal insulation" which has been revised in the light of comments and will be published very shortly. Various types of space heating appliances are defined, and a table sets out the characteristics of each type. Certain factors which influence space heating requirements are brought to notice, and the importance of collaboration and consultation at the planning stage between interested parties is stressed, as effective use of the appliances will depend on their selection and placing according to particular requirements of rooms.

The Code offers a good general guide to heating standards normally required and advice on how to obtain them. Heating standards for rooms are recommended and a method of computing the rating of electric heaters required is given in an appendix. A table shows the rating of electric heaters required under various circumstances in typical ground-floor rooms. Ratings are given for two standards of thermal insulation, the higher standard being based on the recommendations of the Code of Functional Requirements, Chapter VIII. Further recommendations are made on the heating of bedrooms, bathrooms, kitchens, halls and staircases, and information on necessary safety measures is included.

The Code carries the usual warning that during the present abnormal conditions it may not be practicable to take full advantage of all the recommendations made in it. The price is 2s. and the reference C.P.324.201 (1948).

Electrical Installations.

The Codes of Practice Committee has now issued in final form Code 321, "Electrical Installations—General." It was previously published as a draft for comment and was revised before final publication by a committee convened by the Institution of Electrical Engineers, on behalf of the Codes of Practice Committee. The price is 7s. and the reference C.P.321 (1948).

Telephones and Telegraphs.

The Codes of Practice Committee has now issued, as a draft for comment, Code 327.102, "Telephones and telegraphs—private services," prepared on their behalf by a committee convened by the Institution of Electrical Engineers. The price is 5s. and the reference C.P.(B)814.

These Codes may be obtained from the British Standards Institution, 24-28, Victoria-street, S.W.1.

THE SCOTTISH BUILDER

SWEDISH HOUSES FOR CROFTERS

A HUNDRED Swedish timber houses are to be imported into the islands of Harris and Lewis, the homes of the Harris tweed industry, to relieve the housing shortage. They will cost from £1,500 to £2,000 each, and will be allocated chiefly to key-workers in the spinning-mills of Stornoway and to weavers of Harris tweed in rural districts.

Because of inadequate housing accommodation, especially in rural areas, some islanders have left the tweed industry, for genuine Harris tweed must by law be woven in the homes of the crofters if it is to comply with the regulations. The new Swedish houses will be an innovation, for the majority of them will be two-storey buildings having pitched roofs, covered with cedar shingles.

NEW BUILDINGS

Bishopbriggs.—Lanarkshire C.C. to erect classrooms, etc., at the Higher Grade School, for which the architect is William Watt, Albert-rd., Motherwell.

Carluke.—New business premises and storage buildings to be erected at High-st. and Hamilton-st., for which the architect is John MacDonald, 88, Hydepark-st., Anderston, Glasgow.

Chapelhall.—Lanarkshire C.C. to erect houses at Woodhall-st., for which the architect is Mr. Samuel MacColl, County-bldgs., Beckford-st., Hamilton.

Glasgow.—Alterations and additions are to be made at the Jamaica-st. buildings of William Hill (Glasgow), Ltd., for which the architects are John Fairweather & Son, Green's Picture House-bldgs., Renfrew-st., Glasgow.

Glasgow.—Corporation to erect housing scheme at Sandyhills-rd., for which the Housing Architects, 20, Trongate, Glasgow, have plans in hand.

Glasgow.—Corporation to erect dining department and kitchen, etc., at Woodside Senior School, for which the architect is John MacNab, 129, Bath-st., Glasgow. Plans in hand for extensions and alterations, etc., for Messrs. John Thomlinson & Co., Ltd., at Dumbarton-rd., for which the architects are Charles MacNair, Elder & Ridley, 529, Sauchiehall-st., Charing Cross, Glasgow.

Glasgow.—Extensions, etc., to be made at Woodville-st., by Elciss, Ltd., of Grosvenor-gdns., London, S.W.1, from plans by their own architects.

Glasgow.—T.C. are now permitted to begin the construction of 750 of the 1,160 traditional houses in the city, for which tenders had been approved, but which had not been started at the end of October, 1947.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

FEBRUARY 23.

†***Bath T.C.**—Phase 1 of New Junior School at Moorlands estate. W. G. Nixey, F.R.I.C.S., 18, Charles-st. Dep. £2 2s.

†***Keynsham U.D.C.**—32 houses at Broadlands estate. T.C., Council Offices. Dep. £2 2s.

FEBRUARY 25.

Todmorden T.C.—(1) Six houses; (2) four shops with four flats over. T.C., Mun. offices. Dep. £2 2s.

FEBRUARY 26.

***Carshalton and Merton and Morden Joint Cemetery Board.**—Superintendent's house and office at Cemetery, Garth-rd., Lower Morden. Joint Clerks to the Board, Morden Hall, S.W.19. Dep. £3 3s.

Clonmel T.C.—32 houses at Toberaheena. Acting T.C., Town Hall. Dep. £10.

Henley-on-Thames.—12 houses at Greys-rd. North. T.C., 33, Market-pl. Dep. £2 2s.

Louth C.C.—151 cottages. County Secretary, County Offices, Dundalk. Dep. £3 3s.

†***Morecambe and Heysham T.C.**—52 houses at Blackberry Hall estate, Section No. 1. B.S., Town Hall. Dep. £3 3s.

†***Morecambe and Heysham T.C.**—Repair to walls of swimming bath. B.S., Town Hall, Morecambe. Dep. £1 1s.

†***Staffs C.C.**—Kitchen and dining-room at Stafford Girls' County Secondary (Grammar) School. H. C. H. Stillman, Architect & S., County Ed. Offices, Earl-st., Stafford. Dep. £4 4s.

†***Warrington C.B.**—24 flats at Dallam Farm estate (1). B.E. & S., Town Hall. Dep. £2 2s.

FEBRUARY 28.

†***Buckingham R.D.C.**—22 houses at five sites. Scherrer & Hicks (FF.), 50 George-st., Croydon. Dep. £1 1s. each site. Tenders by March 22.

Norwich.—214 dwellings at South Park-ave. estate. Arch., City Hall. Dep. £1.

MARCH 1.

Cirencester T.C.—4 houses at Ampney Crucis, Pyle & Saint, Thomas-st House. Dep. £2 2s.

†***East Suffolk C.C.**—Dining-room and kitchen at Eye County Modern School. E. J. Symcox (F.), County A., County Hall, Ipswich. Dep. £2 2s.

Nottingham Technical College.—Rebuilding of west wing at Pearce-st. Acting Clerk to Governors, Ed. Offices, South-parade. Dep. £2.

***Peterlee Development Corporation.**—Orlit huts and in situ work in reinforced concrete. Tenders on prescribed form to general manager, Shotton Hall, Castle Eden, Co. Durham.

MARCH 3.

Burgess Hill U.D.C.—22 houses at West Park estate. E. & S., 32, Church-rd. Dep. £2 2s.

***Calne and Chippenham R.D.C.**—Four houses at Sutton Benger and four at Upper Seagry site. Edwards & Webster, Chartered Architects, 32, Market-pl., Chippenham. Deps. £3 3s. each scheme.

***Merton and Morden U.D.C.**—Public conveniences, Morden Park, London-rd. E. & S.

***St. Albans R.D.C.**—12 flats at Tassell Hall estate, Lybury-la., Redbourn. T.C., 43, Upper Lattimore-rd. Dep. £1 1s.

MARCH 4

***Chertsey U.D.C.**—Mess room at sewage disposal works, Lyne. E. & S., Council Offices. Dep. £1 1s.

Strood R.D.C.—30 houses and 8 flats at 2 sites. E. & S., Council Offices, Frindsbury-hill. Dep. £5 5s.

MARCH 5.

Kingsclere and Whitchurch.—4 houses at 2 sites. F. Henshawe (F.), Westminster Bank-chbrs., Andover. Dep. £2 2s.

North Cotswold R.D.C.—4 houses at Evenlode. T. Rayson, F.R.I.B.A., 29, Beaumont-st., Oxford. Dep. £2 2s.

Oswaldtwistle U.D.C.—10 houses at 2 sites, 20 flats, 4 bungalows. S., Town Hall. Dep. £2 2s.

MARCH 7.

Crayford U.D.C.—6 bungalows and 4 houses at Cray-close. E. & S., Town Hall. Dep. £1 1s.

***Merthyr Tydfil E.C.**—Canteen at Dowlais R.C. School. B.E., Town Hall. Dep. £2 2s.

***Nottingham T.C.**—New school at Birchover-rd. R. M. Finch, O.B.E., City E. & S., Guildhall. Dep. £2.

***Oldham C.B.**—28 houses at Limeside estate. Cameron & Middleton, A.R.I.C.S., 88, Mosley-st., Manchester. Dep. £2 2s.

***Oldham C.B.**—Erection of new buildings, roads and site works at Glodwick-rd. A. Millward, M.Inst.P.C., Director of Public Cleansing, Gas-st. Dep. £5 5s.

MARCH 8.

Grimsby T.C.—88 houses and 24 bungalows at 3 sites. B.E. & S., Municipal Offices, Town Hall-sq. Dep. £3 for each job.

Strabane R.D.C.—56 houses at 2 sites. M'Carthy Lilburn, Scottish Provident-bldgs., Belfast. Dep. £2 2s.

MARCH 9.

Southwell R.D.C.—60 houses at 3 sites. Housing A. & S., 8, Westgate. Dep. £2 2s.

MARCH 10.

Marshland R.D.C.—16 houses at 3 sites. Arch., Council Offices, Alexandra-rd., Wisbech. Dep. £1 1s.

MARCH 12.

***Egham U.D.C.**—38 houses at Wapshott Farm estate. Clerk of Council, 155, High-st. Dep. £2 2s.

Evesham R.D.C.—44 houses at 4 sites. F. B. Andrews & Son, 95, Colmore-row, Birmingham. Dep. £2 2s.

MARCH 14.

***Dartford B.C.**—64 houses at Temple-hill neighbourhood unit. T.C., High-st. Dep. £2 2s.

***St. Helens C.B.**—60 houses, East Lancashire-rd. estate. M. Ward, Boro' & Water Eng. Dep. £2 2s.

†***Tottenham B.C.**—42 houses at Park-la., Cheshunt. B.E. & S., Town Hall. Dep. £2 2s.

MARCH 15.

***Wem U.D.C.**—Preparation of housing site, The Grove. Surveyor. Dep. £2 2s.

MARCH 16.

Kendal T.C.—40 houses at Hallgarth estate. B.E. & S., Municipal Offices, Lowther-st. Dep. £2 2s.

Kerry C.C.—49 cottages at various sites. County Sec., Killarney. Dep. £10.

MARCH 18.

***Sunderland C.B.**—Erection of Hill-view prim. jun. sch. at Hill-view estate. T.C., Town Hall. Dep. £2 2s.

MARCH 19.

Crickhowell R.D.C.—4 houses at Llangattock. J. M. Jones & Son, Abergavenny. Dep. £3 3s.

MARCH 22.

†***Oxfordshire C.C.**—Prim. sch. at Kidlington. C.A., 3, Becket-st., Oxford.

†***Oxfordshire C.C.**—Prim. sch. at Neithrop, Banbury. C.A., 3, Becket-st., Oxford.

NO DATE.

***Brighouse T.C.**—14 bungalows and 26 houses at Stoney-la. and 20 houses at Cain-la. estate. B.E. & S., Commercial-st.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

FEBRUARY 28.

Tynemouth C.B.—B.S., 19-20, Howard-st., North Shields (Materials).

MARCH 5.

Yiewsley and West Drayton.—E. & S. (Materials).

MARCH 7.

Doncaster.—Ptg. of houses at various estates. Estates S., 15, South-parade. Dep. £3.

Tenterden T.C.—B.S., Town Hall (Materials and Services).

MARCH 9.

Carmarthenshire E.C.—Ptg. at various schools. H. W. Jones, County Hall, The Castle.

MARCH 12.

***Southend-on-Sea C.B.**—Supply of 3,350 yds. of galvanised chain link fencing 4 ft. 6 in. high. T.C., Municipal-bldgs.

ROADS, SEWERAGE AND WATER WORKS

FEBRUARY 22.

†**Watford B.C.**—Roads and sewers, contracts 1 and 2. F. C. Saye, A.M.Inst.C.E., M.I.Mun.E.

MARCH 1.

Harrow U.D.C.—Roads and sewers at Honeypot-la. estate, Kenton. E. & S., Council Offices, Uxbridge-rd., Stanmore, Middx. Dep. £2.

MARCH 7.

East Riding C.C.—Surface dressing of roads. Clerk of C.C., County Hall, Beverley.

MARCH 11.

Bathavon R.D.C.—Sewerage and sewage disposal. Willcox, Raikes & Marshall, 33, Gt. Charles-st., Birmingham. Dep. £3 3s.

MARCH 12.

***Merthyr Tydfil C.B.**—Advance preparation of housing site at Aberfan Fawr. Boro' & Waterworks E., Town Hall. Dep. £3 3s.

MARCH 14.

Cumberland C.C.—Surface dressing of roads. County S., Citadel-chbrs., Carlisle.

Isle of Wight R.D.C.—Construction and maintenance of 4,330 yds. of 9-in. dia. spun-iron supply main and incidental works at Shalcombe and Freshwater. Lemon & Blizard, Castle-la., Southampton. Dep. £5 5s.

MARCH 16.

Malton R.D.C.—Sewerage and sewage disposal. D. H. Moore, B.Sc., A.M.I.C.E., 12, Valley Bridge-parade, Scarborough. Dep. £5 5s.

MARCH 21.

Ashford (Kent) U.D.C.—Construction of concrete and stoneware sewers, manholes, etc., at Maidstone-rd. S., 5, North-st. Dep. £2 2s.

Maidstone R.D.C.—Sewerage and sewage disposal at East Farleigh. E. & S. Dep. £2 2s.

MARCH 28.

Devizes R.D.C.—Sewage disposal works and laying of sewers. Ross, Hooper & Harvey, 38, Market-pl., Chippenham, Wilts. Dep. £1.

***Spalding R.D.C.**—Construction, completion and maintenance of reinforced concrete water tower at Crowland, C., Council Offices, 10, The Crescent. Dep. £5.

NO DATE.

***Pontypool U.D.C.**—Site works for 100 houses at Cwm Farm site. P. Edwards Walker (A.), A.R.I.C.S., Market-bldgs. Dep. £2 2s.

Tanganyika.—Construction of 20 miles of sewers at Dar-es-Salaam. Howard Humphreys & Sons, 17, Victoria-st., S.W.1.

GENERAL BUILDING WORK

(LONDON)

City.—REBUILDING.—Sir Hubert Worthington A.R.A., preparing plans for rebuilding of City Hall of the Merchant Taylors Company in Threadneedle-st.

Fulham.—HOUSING.—B.C. to purchase St. Etheldrede's Church site, Fulham Palace-rd., for housing.

Holborn.—RESTORATION.—Of Royal College of Surgeons in Lincoln's Inn Fields proposed. Young & Hall (F.), 9, Southampton-row, W.C.1, are the architects.

Shoreditch.—COMMUNITY CENTRE.—T.C. propose erection of community centre at Stonebridge estate.

Shoreditch.—HOUSING.—B.C. to purchase 13-16, Branch-pl. for housing.

West Wickham.—HOUSING.—Beckenham B.C. applied to M.H. for loan sanction of £5,350 for acquisition of site at Oak Lodge estate for erection of 80 houses. B.E., J. Dove.

(PROVINCIAL)

Alfreton.—U.D.C. propose houses at Cemetery-la., Meadow-la. and Mansfield-rd.

Ashton-in-Makerfield.—U.D.C. propose 8 bungalows at Morden-ave. U.D.C. to seek sanction of M.H. for 50 additional houses by direct labour at Bryn Station site; received sanction of M.H. to borrow £78,000 for 62 houses, Bryn Station site.

Ashton-in-Makerfield.—U.D.C. approved: Extensions to restaurant at 40, Rectory-rd., for E. Barton; bungalows, Golborne-rd. and Low Bank-rd., for Smith & Hurst.

Belfast.—T.C.'s Special Housing Committee to prepare two-year programme for 1,063 houses on six sites in 1949-50, and 1,469 on five sites in 1950-51. 800 aluminium bungalows to be erected this year, and work will commence on flats at Parkmount estate, Skegoniel-av. and Annadale-embankment.

Birmingham.—T.C. propose houses at West Heath, Cofton-rd., and Great Stone-rd., Northfield.

Bollington.—U.D.C. propose: Agricultural houses at Greenfield-rd., 30 additional houses, Grimshaw-la.

Bolton.—T.C. propose houses at Old Nan's-la., Breightmet, and shops at Breightmet Hall and Lever Edge-la. estates.

Bolton.—T.C. approved: Alterations to Weavers Arms, 85, Deane-rd., for Cornbrook Brewery Co., Ltd., Ellesmere-st., Manchester 15; additions, Mortfield Tavern, Gaskell-st., for William Tong & Sons, Ltd., brewers, Mealhouse-la., T. E. Smith & Sons (L.), Central-chambers, Folds-st.; extensions, 25, Market-st., for Wm. Blain & Sons, Ltd.; day nursery, Coe-st., for J. Marsden & Sons, Ltd.; branch bank, Rishton-la. and Green-la., for Bolton Trustee Savings Bank, Hotel-st.; 10 houses, Brailsford-rd., for Turner Bros., builders, 2, Firwood; additions, Grand Theatre, Churchgate, for Bolton Theatre & Entertainments, Ltd. R.C. authorities propose technical sec. sch. for boys and one for girls. T.C. received sanction to borrow £6,878 for day nursery at Roxlina-st. T.C. propose: nurs. sch. at Thomasson Park; new gasworks at Union-rd. T.C. propose houses at Oldham's Farm. T.C. approved 46 bungalows, 8 houses and maisonettes, 4 shops and 8 flats for housing cttee.

Brierley Hill.—U.D.C. propose civic restaurant at rear of The Elms. Jennings, Homer & Lynch (L.), 3, Church-st.

Brighouse.—T.C. propose 22 houses and 14 bungalows at Stoney-la. estates, and 20 houses in stone and roughcast at Cain-la.

Bury.—T.C. propose 408 houses (70 by private enterprise). T.C. seeking loans of £13,558 for 10 houses, Redvales estate, and £17,080 for 24 flats at Huntley Mount site.

Caernarvon.—T.C. propose houses at Cae Bold.

Cardiff.—Plans for crematorium at Thornhill (£111,000) and public hall at Sophia-gdns. (£26,500) approved by T.C.

Castle Ward (Northumberland).—Provisional licence granted to Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, for erection of hotel at Avondale estate.

Chester.—Health Com. propose adaptation of St. Martin's House, for maternity and child welfare centre. Cheshire Standing Joint Committee approved 62 police houses at £114,000; propose 169 additional police houses.

Chesterfield.—Regional Hospitals Com. propose 168 additional police houses.

Chesterfield.—Regional Hospitals Com. propose extensions to Walton Sanatorium, at £5,000.

Chesterfield.—Tennant Bros., Ltd., Exchange Brewery, Sheffield 1, propose rebuilding Devonshire Arms Hotel at Boythorpe-rd. Derbyshire C.C. propose extensions to William Rhodes jun. and infs. sch., Whitecote-la., Boythorpe.

Chorley.—R.D.C. propose houses at Bolton-rd., Anderton, Mawdesley and Blackburn-rd., Wheelton.

Church Lawton.—Building Cttee. propose memorial hall.

Coventry.—Regional Hospitals Board propose completion of Coventry and Warwickshire Hospital at Stoney Stanton-rd. T.C. propose home for aged people at Broad-la., at £23,000. T.C. received allocation of 250 houses (private enterprise).

Darlington.—M.O.E. approved in principle E.C.'s plan to build a high sch. for girls at Hummersknott. E.C. also planning college at site of high sch. at Cleveland-av., using existing buildings in scheme. Boro' A., E. A. Tornbohm, Central-bldgs.

Daventry.—R.D.C. approved 120 houses at six sites for housing cttc. R.D.C. propose 12 houses at Newnham. T.C. propose 36 houses at Braunston-rd. housing estate.

Dorchester.—R.D.C. have been allocated additional 50 houses.

Droitwich.—R.D.C. approved: Dutch barn to Hollow Court Farm, Stock Green, for F. Simons; dairy, sterilising and mixing rooms at Temple Broughton Farm, Hanbury, for Webb Bros.; houses, Wychbold, for the Waldor Tool & Gauge Co., Ltd., and R. L. Pritchett.

Durham.—Steel, Coulson & Co., Ltd., Edinburgh, have been granted provisional licence for building of hotel at Sherburn-rd.

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Eastbourne.—M.H. allocated 250 houses for year (50 by private enterprise), plus 78 brought forward from 1948.

East Riding.—E.C. propose 15 county colleges and agricultural institute, at £1,177,000. J. Catchpole (A.), C.A., County-bldgs., Northallerton.

Failsworth.—U.D.C. propose 70 houses and shopping centre at Propps Hall estate.

Felling.—Housing Architect to U.D.C. (D. W. Green), preparing plans for shopping centres at council's estates.

Formby.—Lancs C.C. propose branch library at Brows-la.

Gateshead.—B.E. (F. H. Patterson) submitted to T.C. a comprehensive report on development of Wrenton area. Tenders likely to be invited shortly by T.C. for construction of new ambulance depot, at £15,000, to plans by the Chief Architect, H. J. Cook. T.C. is to erect six shops and six flats at Coach-rd estate, and one shop and five flats at Blue Quarries estate. T.C. to erect 10 houses at Beechwood-gdns. T.C. to build 300 houses this year.

Glossop.—Derbys. C.C. propose sec. sch.

Halesowen.—A. & J. Mucklow & Co., Ltd., Haden Cross, Haden-hill, propose five shops at Hasbury Farm estate.

Lanarkshire.—C.C. allocated 180 Blackburn houses and 100 traditional houses to be erected at Allanton, Blantyre, Chapelhall, Shotts and Tannockside.

Longbenton.—J. Rowell & Sons, 143, High-st., Gateshead, seeking licence to build hotel at Salters-la.

Manchester.—T.C. to purchase land at Ancoats and Hulme for 165 flats.

Manchester.—T.C. approved: Reinstatement of factory after war damage, 180-182, Cheetham Hill-rd., Cheetham, for M. Morris, Manchester New-rd., Middleton; factory, 73, Holland-st., Collyhurst, for J. Kayley, G. E. Green, architect, 1b, Marsden-st., Brown-st.; nurses' home and extensions to maternity hospital, Beechmount, Rochdale-rd., Blackley, for trustees of North Manchester Nurses' Home and Maternity Hospital, J. E. Kewell (F.), 7, Market-st., Altrincham; extensions, motor showrooms and offices, 560-566, Stockport-rd., Longsight, for Fairclough Motors, Ltd., plans by Architectural Drawing Services, 26, Whittle-gro., Smithills, Bolton; dining-room and kitchen at St. Mary's R.C. School, Clare-rd., Levenshulme, for E.C., L. C. Howitt (F.), City A., Town Hall. T.C. propose omnibus garage at Bower-st., Newton Heath. E.C. propose day nursery at Ardwick. Methodist Church Trustees propose conversion of buildings at Greenbrow-rd., Newell Green, for church and Sunday sch.

Mansfield.—T.C. approved: Engineering works, Gas-hill, Pleasley-hill, for W. Wild; wireless station, Berry Hill-rd., for Notts County Constabulary.

Middleton.—T.C. approved: Layout and three type plans of Meadow development scheme, for P. Roydes & Co., Ltd.; detached houses, Dingle-rd., Alkrington, for J. Sharpe and B. Lord, 220, Manchester New-rd.; two shops and houses, junction of Heywood New-rd. and Langley-la., for Ashton Smethurst (Builders), Ltd. Lancs E.C. propose sec. sch. at Kenyon-la.

Morecambe and Heysham.—Lancs E.C. propose adaptation of premises at Euston-rd., for maternity hostel.

Newcastle (Staffs).—T.C. approved: Factory, Lower Milehouse-la., for B. Newbold, Ltd. Hulme & Upright, architects, District Bank-chambers, Tunstall, Stoke-on-Trent; rebuilding, Shakespeare Inn, George-st., for Bass; Ratcliff & Gretton, Ltd., Forshaw & Greaves (A.), 35, Albion-st., Hanley, Stoke-on-Trent; alterations, Bull's Head Hotel, Lad-la., for Parker's Burslem Brewery, Ltd., R. Scrivener & Sons, architects, Howard-pl., Hanley, Stoke-on-Trent; alterations, Brown Jug Inn, Marston, for Thompson & Evershed, Ltd., Adams & Edwards (A.), architects, 5, Brook-st., Stoke-on-Trent; detached house, Sandon-ave., for G. U. Johnson, C. B. Parkes (L.), Bournville Village Trust, Estate Office, King's Norton, Birmingham 30; social centre and mission church, Bradwell estate, Porthill, for Trustees. T.C. propose swimming baths at Brunswick-st. T.C. approved works, High Carr, Chesterton, for New High Carr Colliery, Ltd., W. J. & C. P. Bates, mining engineers, Midland Bank-chambers. T.C. propose 250 houses.

Newport.—Salop C.C. propose prim. sch. at Granville-av. A. Guy Chant (F.), C.A., 5, Belmont, Shrewsbury.

North Riding.—E.C. planning county colleges at Cleveland (£79,000); Eston (£132,000); Thornaby (£73,000); Whitby (£55,000); Malton and Norton (£61,000); New Earswick (£43,000); Northallerton (£51,000); Pickering and Ryedale (£43,000); Richmond and Swaledale (£65,000); Stokesley (£35,000); Easingwold (£19,000); Thirsk (£19,000); Wensleydale (£19,000); Scarborough (£189,000); and Redcar (£166,000). Cttee. also considering erection of farm institute. County Architect, County Hall, Northallerton, Yorks.

North Shields.—Tynemouth T.C. to acquire land for East End Development Scheme, North Shields.—Tasker & Child, Trinity Buildings, new Bridge-st., Newcastle-on-Tyne, are architects for factory at Bird-st., North Shields.

for Manley's Food Products (North Shields), Ltd.—Newcastle Breweries, Ltd., Haymarket, Newcastle-on-Tyne, to rebuild Robin Hood inn, Beacon-st., North Shields; architects, J. Oswald & Son, 68, Northumberland-st., Newcastle-on-Tyne.—Boro. E., 19, Howard-st., prepared revised plans for gymnasium and staff rooms at Tynemouth High Sch.

Northwich.—R.D.C. propose houses at 20 sites.

Oldham.—Platt Bros. & Co., Ltd., Hartford Works, propose youth centre at Werneth, plans by J. W. Hitching, Schools Arch., Ed. Offices, Union-st. West. T.C. seek sanction to borrow £58,815 for 52 flats at Limeside estate. T.C. received allocation of 415 houses. E.C. propose nurs. sch. at Lee-st. sch., canteens at Clarksfield and Hathershaw council schs.

Ormskirk.—U.D.C. approved automatic telephone exchange at Aughton-st., for P.M.G., for M.O.W.

Peterborough.—Tech. coll. to be erected at £500,000. David Jenkins, A.R.I.B.A.

Preston.—Lancs E.C. propose prim. sch. at Bleak Hill-rd., Windle, G. Grenfell Baines (A.), 12, Guildhall-st.

Prudhoe (Northumberland).—J. M. Angus, Hanover-sq., Newcaste-on-Tyne, is architect for erection of 20 brick houses at Oaklands estate for U.D.C.

Rochdale.—T.C. propose: Public wash-house at Entwistle-rd., adaptation of Brooklyn, Rochdale-rd. East, Heywood & Olive House, Bacup, for hostels for aged people.

Rotherham.—T.C. approved: Factory, Industrial Trading Estate, Eastwood, for M.O.W.; s.d. houses, Herringthorpe-rd., for J. C. Earnshaw, builder, 149, Masborough-st.: building, religious youth welfare purposes, College-rd., for A. Briddle. T.C. propose houses at four estates, at £476,000; approved layout plans for houses, Broom Valley and Richmond Park estates; health centre and day nursery sites; pumping station at Boston Park.

Salford.—T.C. approved: Development of site for houses at Lullington-rd. and Buckland-rd., Pendleton, plans by Batey, Markham, Heywood & Co., surveyors, 90, Deansgate; laundry, John-st. Works, for Pendleton, Robinson & Ackers. T.C. propose 198 houses at Worsley; approved 36 flats, Eccles New-rd.; day nurseries at six sites.

Scunthorpe.—Lindsey C.C. propose schs. at The Queensway.

Sheffield.—A. Reed, 89, Freedom-rd., propose workshop and garage on Duke-st. and Bernard-st. Kerry's (Great Britain), Ltd., propose workshop, warehouse and showrooms at Furnival-st., Furnival-la. and Eyre-st. Walker & Hall, Ltd., propose reinstatement of factory at Eyre-st., Cadman-la. and Howard-st. Royal Insurance Co., Ltd., propose offices at Church-st. and Vicar-la.

Southend.—T.C. submitting to M.O.H. scheme for crematorium costing £43,000, to be built at Sutton-rd

South Shields.—M. of E. confirmed T.C.'s compulsory purchase order regarding site at Barnes-rd. for dining-rooms for Barnes and Gilbert-st. schs. Page, Son & Hill, 75, King-st., South Shields, appointed architects for alterations to Marine sch., Ocean-rd., for E.C.

Stockport.—T.C. approved: Extensions to works, Adswood-rd., for C. H. Johnson, Ltd.; 10 houses, Hillcrest-rd., for Chas. Baker; works, Wood-st., for J. McEvoy; extensions to factory, Newbridge-la., for Pickering's Produce Canners, Ltd.

Stone.—U.D.C. to build 250 houses at Common Plot, off Old-rd.

Stretford.—T.C. approved: Headquarters, adjoining 185, King's-rd., for St. John Ambulance Assn.; additions to works, Praed-st., for Falcon Oil Co., Ltd.

Sunderland.—Matkin & Hawkins, Barclays Bank-chbrs., Fawcett-st., are architects for extending bakery at Hedworth-st. Alterations to factory at Villiers-st. to plans by Stephenson & Gillis, Saville-chbrs., Newcastle-on-Tyne. North-Eastern Electricity Board, Carliol House, Newcastle, propose office extension at Sunderland Power Station. T.C. received M.H. consent to borrow £180,306 for erection of 140 houses at Pennywell estate.

Swansea.—T.C. to acquire land at West Cross (Part 3) housing site for housing.

Warrington.—Warrington Co-op. Soc., Ltd., Sankey-st., propose six shops at Dallam Farm and Poplars-av.

West Bromwich.—T.C. approved rebuilding 163-165, High-st., for H. E. Bradsworth & Son, Ltd., Cherrington & Stainton (A.), 133, Edmund-st., Birmingham 3; extensions to works, Black-la., for Ace Coachwork, Ltd., H. Smith, architect, Wakeley-hill, Penn.

Westerham.—T.C. have approved plans for Methodist church to be built at Newstead-rd.

West Hartlepool.—Plans approved for factory at trading estate for North-Eastern Trading Estates, Ltd., Low Fell, Gateshead. T.C. approved layout plans by Boro' A (S. M. Richmond) for 180 houses at Rift House estate.

Wharfedale.—R.D.C. approved: Dairy and farm bldgs., Bramhope Grange Farm, Bramhope, for L. N. Wilson; Memorial Hall, Pool Bank Bldg. Ctte., Oswald Holmes & Son, architects, 31, Boroughgate, Otley.

Wigan.—T.C. seek sanction to borrow £175,926 for 135 houses at Norley Hall estate.

Windermere.—Licensing Justices approved alterations at Hydro Hotel, at £7,000, for Hydro Hotel Co.

Workington.—T.C. approved: 12 houses for key workers, Distington Engineering Co., Ltd.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Aberdovey.—18 houses, for U.D.C.: *Morgan Price, Towyn, £23,978.

Ashton-under-Lyne.—Nursery school, Queen-st., for Lancs E.C. G. Noel Hill (F.), County A., County Offices, Fishergate-hill, Preston: *Wellerman Bros., Ltd., Edward-st., Hyde, Cheshire, £15,582.

Bedford.—Modification and enlargement of reservoirs, for T.C.: †R. G. Horton (Engineers), Ltd., £116,893.

Berwick-upon-Tweed T.C.—For 4 blocks of 2 bungalow dwellings with site development works at Spittal Hall Farm. Borough Surveyor, Municipal-bldgs.: *J. H. Pierce, Berwick-upon-Tweed.

Billinge-with-Winstanley.—50 houses, Claremont estate, for U.D.C. J. M. Wilson & Son, architects, Midland Bank-bldgs., St. Helens, Lancs: *J. Gaskell & Sons, 290, Upholland-rd., Billinge, nr. Wigan, £65,047.

Brierley Hill.—Eight houses (10 dwellings), together with fencing, drainage and footpaths, Dunn's Bank estate, Quarry Bank, for U.D.C. J. R. Moore (A.), Architect and Housing Director, Council Offices, Moor-st.: *J. E. Garratt & Co., Ltd., Brierley Hill, £9,797.

Bromsgrove.—Alterations to Lickey End county prim. sch., for Worcestershire C.C. L. C. Lomas (F.), County A., 60 The Tything: *W. R. Mansell, 14, Broad-st., Bromsgrove.

Burghfield.—6 houses, for Bradfield R.D.C.: *J. D. Whitburn & Son, £8,138.

Bury.—22 houses, Redvales estate and 24 flats, Huntley Mount site, for T.C. J. Chadwick, M.B.E., A.M.Inst.C.E., B.E., Municipal-bldgs., Bank-st.: *G. T. Hughes, 2, Coniston-dr., Bury (10); *T. Eaves, 163, Radcliffe New-rd., Whitefield, nr. Manchester (12); *Direct Labour Department, Bury Corporation, £17,080 (24).

Castle Ward.—10 houses at Dinnington Village, for R.D.C.: *H. R. Atkinson, Riding Mill, Northumberland.

Chesterfield.—14 houses, Rotherham-rd., Killamarsh, for R.D.C. J. B. Wikeley, E. & S. Quantities by Whitehead & Nodder, Sheffield: ‡G. W. Stainforth, Moor Valley, Mosborough, nr. Sheffield.

Clitheroe.—Nur. sch. at Queen-st., for Lancs E.C. G. Noel Hill (F.), County A., County Offices, Fishergate-hill, Preston: *J. Blezard & Sons, Railway-view, Clitheroe, £16,541.

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Coleraine.—12 houses at Millburn, for T.C.: *S. M. Oliver, Coleraine, £15,083.

Consett.—26 houses at Stanefordham Estate, for U.D.C. J. J. Eltringham, architect, Derwent-st., Blackhill: *H. Ayton & Son, Blackhill, £30,150.

Coventry.—Construction of basement "B" in connection with central redevelopment scheme of Broadgate, for T.C. D. E. E. Gibson (A.), City A., 1a, Warwick-row: *Geo. Wimpey & Co., Ltd., Tilehouse la., Denham, Uxbridge, Mddx., £20,793.

Denby Dale.—46 houses at housing estates, for U.D.C. E. E. B. Harrison, Council Offices: *Spooners, Ltd., 152, Durham-st., Hull, £27,424 (22); *T. W. Newton, Calder-gr., Horbury, nr. Wakefield, £31,918 (24).

Eccles.—50 No Fines concrete houses, Ellesmere Park estate, for T.C. T. Elce, M.Inst.C.E., B.E., Town Hall, Church-st.: *Geo. Wimpey & Co., Ltd., 629, Eccles New-rd., Weaste, Salford 5.

Gosforth.—Houses for U.D.C. C. Wyld, S.: *M. J. Liddell & Son, Hunters-rd. (24): *Cunningham & Forster, Kenton-la. (12).

Hale.—Completion of 14 partly constructed houses at "The Mount" estate, Hale Barns, for U.D.C. C. P. Higginbotham, S., Council Offices, Ashley-rd.: *Senior Building Co. (1946), Ltd., 2a, Longshutt-la. West, Stockport.

Hartlepool.—Erection of 11 houses, for T.C. R. H. Snowball, B.E.: *Rennie & Son, Regent-sq.

Ilkeston.—Extensions to works, Larklands, for Beardsley & Widdowson: *H. Shaw, Ltd., Laburnham House, Park-rd., Ilkeston, Derbys.

Inverness.—Swedish timber houses, for T.C.: *R. Pert & Son, Montrose (cost about £180,000).

Keighley.—50 additional houses, Bracken Bank estate (extension of existing contract), for T.C. E. G. Felgate (A.), Borough A., Municipal Offices, 26, College-st.: †Ernest Turner, Ltd., Bradford-st., Keighley.

Liverpool.—Rebuilding office block, Exchange-bldgs., Exchange-st., for Liverpool Exchange Co., Ltd. Gunton & Gunton (F.), Empire House, St. Martin's-le-Grand, E.C.1: *Humphreys, Ltd., Knightsbridge, S.W.7, £400,000.

Liverpool.—Jun. and infs. sch., Aintree, for Lancs E.C. G. Noel Hill (F.), County A., County Offices, Fishergate-hill, Preston: *W. A. Gale, Ltd., Linacre-la., Bootle, Liverpool 20, £74,947; aluminium units: *Bristol Aeroplane Co. (Housing), Ltd., Bristol, £38,680.

L.C.C.—Contracts exceeding £2,500 in value placed by the L.C.C. during the period ended February 10:—Reinstatement of anti-landing trenches at Wormwood Scrubbs, E. Doe & Sons (Contractors), Ltd., Essex. Erection of six blocks of dwellings, children's playground and 64 perambulator sheds at Downs-pl. site, Camberwell, Tersons, Ltd., E.C.1. Erection of two blocks of dwellings, 14 perambulator sheds and concrete culvert to existing water course at Ravensbourne estate, Lewisham, Gough Cooper & Co., Ltd., Kent. Construction of block of dwellings, laundry and 12 perambulator sheds at Briant estate extension, Lambeth, F. Troy & Co., Ltd., S.E.1. Construction of two blocks of dwellings and 10 perambulator sheds at Avebury estate, Bethnal Green, Allen Fairhead & Sons, Ltd., Enfield. Electrical installation at Charlton Central Boys' School, Greenwich, The London Electricity Board, Lewisham.

¶London (Air Ministry).—The Directorate of Contracts has placed contracts to the value of £500 or over for the week ended February 12 as follows:—*General maintenance work*: A. Ingham & Son (Builders), Ltd., St. Annes-on Sea; Beric, Ltd., Epsom; and G. & J. P. Gregory, Caernarvon. *Electrical work*: Alpha Mfg. & Elec. Co., Ltd., London, S.W.4.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended February 5:—

London: City Gate House, Finsbury-sq., E.C., interior decorations, C. & T. Painters, Mordaunt-rd., Harlesden; Regent's Park Houses (Section 6), interior decorations, F. Troy & Co., Ltd., 103, Great Suffolk-st., S.E.1; Regent's Park, demolition and erection of greenhouses and erection of boiler-house, Higgs & Hill, Ltd., Crown Works, South Lambeth-rd., S.W.8; Downhills Sec. Mod. Sch., Philip-la., Tottenham, N., temp. sch. bldgs., G. Groves & Son, Ltd., 6, Bruce-gr., Tottenham, N.17; Clapham Central Sch., Aristotle-rd., S.W.4, canteen kitchen, The Bunting Construction Co., Ltd., 71-73, Acre-la., Brixton, S.W.2; Letter Sorting Office, Mount Pleasant, various works, Thomas Bates, Ltd., Church-rd., Harold Wood, Romford. *Derbyshire*: County Sec. Sch., Church-st., Sandiacre, kitchen and dining-room, A. H. Taylor (Nottingham), Ltd., 151, Attenborough-la., Attenborough, Notts; I.R.O., Rutland Court, Matlock, adaptations, J. W. Wildgoose & Sons, Ltd., Industrial Works, Matlock. *Durham*: Miners' Hostel, New Kyo, internal redecoration, Robert Gallacher, Cemetery-rd., Blackhill; Old Bede Playing Field, Sunderland, school meals accommodation, Randle & Co., Ltd., Cedric Joinery Works, Back Dunelm, Sunderland. *Gloucestershire*: Frenchay Park Hospital, Frenchay, Bristol, alterations, John Perkins & Son, Ltd., St. Mark's-rd., Easton, Bristol 5. *Herts*: Senior Mod. and Jun. Sch., Tring, kitchen and dining-room, Donald Lockhart, Ltd., 235, High-st., Berkhamsted. *Kincardineshire*: D.S.I.R. Station, Torry, extensions, A. Hall & Son (Builders), Ltd., 15, Mid-

stocket-st., Aberdeen. *Lancs*: Prescot Tele. Exchange, extensions, John Lucas & Son (Builders), Ltd., 36, Eccleston-st., Prescot; Sutton Manor R.C. Sch., St. Helens, kitchen and dining-room, George Moss & Sons, Ltd., Dennington Saw Mills, Leigh; Pemberton Sec. Mod. Sch., Wigan, kitchen and dining-room, George Moss & Sons, Ltd., Dennington Saw Mills, Leigh. *Northumberland*: Colonial Students' Club, 41, Leazes-ter., Newcastle-on-Tyne, alterations, Thomas Armstrong, Ltd., Robson-rd., Shields-rd., Newcastle-on-Tyne. *Selkirk*: Mossillee, Galashiels, central kitchen, J. Crow & Sons, 3, Coates-pl., Edinburgh. *Staffs*: Abbey-rd. Council Sch., Smethwick, kitchen and dining-room, Wm. Cooper & Sons (Builders), Ltd., West-st., Blackheath, Birmingham. *Surrey*: St. Peter's Hospital, Chertsey, Sterilising equipment building and alterations to X-ray department, Otterway & Try, Ltd., The Causeway, Egham. *Yorks*: Council Sch., Reedness, nr. Goole, kitchen, Platt & Featherstone, Ltd., Boothferry-rd., Goole.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended February 5:—

Yorks: erection of shedding, F. Shepherd & Son, Ltd., York. *Lancs*: painting work, N. S. Long, Ltd., Poulton-le-Fylde. *Sussex*: miscellaneous work, R. Corben & Son, Ltd., Maidstone.

Manchester.—War damage repairs, etc., Cromford House, Cromford-court, Market-st. H. A. Yearsley (L.), Imperial-bldgs., Oxford-rd.: *J. R. Aspden & Son, 250, Great Western-st., Moss-side.

Manchester.—Two-storey extension to premises, 2, Brookside-rd., Moston, for A. Lupton & Co., Ltd.: *Exors. of J. Caine, 62a, Feather-stall-rd. South, Oldham.

Manchester.—Repairs, etc., to requisitioned house, 5, St. Mary's-st., Hulme, for T.C. L. C. Howitt (F.), City A., Town Hall: *S. Forster & Co., 19, Grainger-av., West Gorton, Manchester 12.

Mansfield.—28 houses, with reinforced concrete foundations, Bancroft-la., for T.C. E. T. Crowe, B.Sc., B.S., Municipal-bldgs.: *C. H. Hill & Sons, Ltd., Victoria-st., Mansfield, £37,337.

Newburn-on-Tyne.—50 houses for U.D.C. J. A. Weatherley, S.: *Direct Labour.

Oldham.—Works for T.C. A. L. Hobson, B.Sc., A.M.Inst.C.E., B.E., Mun-bldgs., 75, Union-st. Hutted nursery, Haven-la, Heywood & Ogden, architects, 1, St. Peter's-st.: *Jas. Hartley, Cobden-st., Chadderton, £9,430.

Oldham.—52 "Wimpey" No Fines concrete two-storey flats, Limeside estate. Quantities by Cameron & Middleton, 88, Mosley-st., Manchester 2: *Geo. Wimpey & Co., Ltd., 629, Eccles New-rd., Weaste, Salford 5, £58,303.

Shipley.—16 houses, Leeds-rd., for U.D.C. D. Urwin, S.: *Walter Smith, Gilstead Quarries, Gilstead, Bingley, Yorks, £20,721.

Shoreditch.—79 flats at Bristow-rd., for B.C.: †Walter Lawrence & Son, Ltd., Sun-st., E.C.2, £134,977.

South Shields.—(a) 25 blocks of houses at Lizard-la.: *R. Brown & Sons, Ltd., 24, Lord-st., South Shields, £60,490; (b) 34 aged persons' bungalows at the Lonnen, Quarry-la.: *Henderson Bros. (1936), Smith-st., South Shields, £31,371.

Stockport.—Bridge Hall prim. sch., for E.C. L. Yates (L.), schs. arch., Ed. Offices, Town Hall. Steelwork: *Herbert Parkes & Nephew, Ltd., Waterloo Steelworks, Stockport, £596; electrician: *Wm. Townson & Sons, Ltd., Hill Park-st., Bolton, £819; roof decking: *D. Anderson & Son, Ltd., Park-rd. Works, Stretford, £1,426; metal windows, lantern lights and saucer domes: *Williams & Watson, Ltd., 77, Victoria-st., Liverpool 1, £1,964.

Stretford.—Additional offices adjacent to west wing of upper floor of Town Hall, for British Electricity Authority, for T.C. A. H. Perry, A.M.Inst.C.E., B.S.: †Robert Carlyle & Co., Ltd., Elsinore-rd., Old Trafford, Manchester 16, £1,540 (extension of existing contract).

Sunderland.—96 houses. J. E. Lewis, B.E., 27, Fawcett-st.: *T. Stewart, Hillview Estate (24 houses); *C. Harrison, Toward-rd. (6 houses); *G. H. Plemper, Ltd., St. Hilda's Works (12 houses); *Gordon Bell, Ltd., Viewforth-ter. (12 houses); *Cowell & Rawling, Railway-sidings (6 houses); *T. D. Gibbons & Son, Ltd., Hendon Burn-av. (24 houses); and *Stewart Bros., 10, Lambton-st. (12 houses).

Swansea.—76 traditional houses at Hanover-sq.: *Direct Labour, £97,197.

Wellingborough.—30 houses at Croyland Hall Farm estate, for U.D.C. R. Kilby, M.I.Mun.E., E. & S., Council Offices, Swanspool: *Drury & Co., Ltd., Windmill-av., Kettering, £36,921.

West Hartlepool.—Erection of 4 houses at Sheridan-gr., for T.C.: *J. Peel.

Whitley Bay.—30 houses at Seatonville neighbourhood unit, for U.D.C. E. Roberts, S.: *William Leech, Ltd., Clayton-st., Newcastle-on-Tyne.

Wolverhampton.—Factory for Goodyear Tyre & Rubber Co. (Great Britain), Ltd.: *McKeard Smith & Co., Ltd., Showell-rd., Wolverhampton (work commenced).

Workington. — Construction of Stainburn pumping station, for T.C. Lapworth Partners, con. engineers, Victoria-st., S.W.1: *A. A. Stuart & Son (Glasgow), Ltd., Glasgow, £2,550.

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